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Air Quality Impacts Using SRC Versus Conventional Coal in Power Plants

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ABSTRACT

Air quality modeling to assess the impact of using solvent-refined coal (SRC) as a conventional coal burning substitute in three selected power plants was performed for each of three plants which exceed National Ambient Air Quality Standards when burning coal. The EPA CRSTER Gaussian plume model with minor modifications was applied to calculate ambient air pollution concentrations (for SO_2, NO_x and TSP) when (a) conventional coal and (b) solvent-refined coal are burned.

Emission data from the SRC test that has been conducted at Georgia Power's Plant Mitchell were used to determine emission factors for the three pollutants when burning SRC at each of the plants. The model results for both fuels were assessed for varying load operating conditions at the three plants.

The most significant impact of switching from coal to SRC is the reduction in SO_2 and particulate concentrations at each of the three power plants. At the Shawville Plant, all of the highest 20 maximum 24-hour SO_2 concentrations exceed the NAAQS with coal as the fuel; with SRC as the fuel there are no violations, and the 24-hour concentrations are reduced by 60 to 65 percent. At the Seward Plant, a similar reduction of SO_2 24-hour concentrations (60 to 65 percent) results from the coal to SRC changeover, although no violations of the NAAQS existed to start with. The Kingston Plant shows the greatest reduction of SO_2 24-hour concentrations as a result of the switch to SRC (72 percent); with an accompanying reduction in the frequency of exceeding the 24-hour standard for SO_2.

A switch from conventional coal to SRC reduces the 20 maximum 24-hour particulate concentrations by 46 to 62 percent at the Shawville Plant. At the Seward Plant, the 20 maximum 24-hour particulate concentrations are reduced by 13 to 19 percent. At the Kingston Plant, the reduction is by 79 to 86 percent. Each of the 20 maximum concentrations was in violation of the NAAQS at the Kingston Plant for conventional coal, but all are below the NAAQS for SRC. At all three plants the annual mean particulate concentrations are reduced to essentially background levels when SRC is burned.

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Section 1.0

INTRODUCTION

The substitution of solvent-refined coal (SRC) for conventional coal as the fuel for a steam-electric power plant will change the air quality impact of the plant. Based on SRC emissions data obtained for a pilot plant, a comparative modeling analysis was carried out to characterize expected changes in air quality impact (for SO_2, NO_x and TSP) of three existing power plants. SRC test burn data were obtained from a study conducted by others at a 22-1/2 MW unit of the Mitchell Plant of the Georgia Power Company (Koralek and May 1978).

The three power plants selected for the analysis are:

- Kingston Plant, TVA, 1700 MW, Eastern Tennessee
- Shawville Plant, Penn Electric Co., 640 MW, Western Pennsylvania
- Seward Plant, Penn Electric Co., 268 MW, Western Pennsylvania.

All three plants are located in rural areas of relatively complex terrain. The Seward Plant lies in an area where another power plant (Conemaugh) is contributing to the observed pollution level. The Kingston and Shawville plants are the only large emitters of SO_2, NO_x and TSP in their regions.

A brief discussion of the EPA Single Source CRSTER Model used for the air quality analysis, its input data requirements, the improvements made to the program, as well as a comprehensive description of the assumptions and limitations of the modeling technique as applied to the selected plants, are provided in Appendix A. For each of the three power plants,

detailed information about operating plant characteristics, plant emissions when burning coal and topography was collected. Meteorological data for a full year were assembled for recording locations in proximity to the plants in question. A discussion of the meteorological data used for each plant site is also presented in Section 2.0.

The next step in the analysis was to obtain and review SRC test burn information available from the Georgia Power Company's Mitchell Plant. These data are described in Section 3.0. Emission rates were calculated for SO_2, NO_x and particulates from the Mitchell SRC test burn, relating the rates to fuel consumption, chemical analysis of fuel and BTU content per unit weight of fuel. Emission factors for the use of SRC fuel in the three selected power plants were computed. The calculation of emission rates and emission factors is described in Section 3.0.

For air quality impact analysis, the dispersion of pollutants from each of the three power plants was modeled for a full-year period burning conventional coal or solvent-refined coal under normal and maximum load conditions. For each configuration, 24-hour annual, 3-hour annual and annual average ambient concentrations of SO_2, NO_x and TSP were calculated with CRSTER for 180 selected receptor points. Maximum values, exceedances, numbers of and distribution of exceedances for each averaging period are identified in Section 4.0. Summary printouts of the dispersion modeling analyses appear in Appendix B. A tabulated comparison of the ambient air quality impacts of the results of burning coal and SRC at the three modeled plants is presented in Section 4.0. A discussion of the implications of burning SRC instead of coal in the three locations is

included in Section 5.0. The extent of decrease or increase in probable NAAQS exceedances of SO_2, NO_x and TSP as a result of the fuel shift, and the confidence limits of the Gaussian plume model are also discussed. Substantial reductions in the frequency of exceeding the NAAQS for SO_2, and particulates for annual mean, 24-hour and 3-hour concentrations occur at both the Shawville and Kingston Power Plants as a result of the switch from coal to solvent-refined coal, and are quantified in Section 5.0.

Section 2.0

DATA PREPARATION

The data required to make air quality analyses may be classified as source or emission data, including emission rates, stack height, stack diameter, and stack gas exit temperature and velocity; and as meteorological data, including wind speed, wind direction, atmospheric stability, mixing height and ambient temperature. These data are obtained from a variety of sources each of which may have a separate format and units. A good portion of the work of this study has been concerned with assembling, checking, editing, merging and otherwise preparing the data for use in the air quality model.

The primary source of emission data was furnished by information from the Federal Power Commission Form 67 for each of the three power plants. Generally, the available data were complete and accurate. Emissions were summed over all units ducting into a particular stack.

Average monthly values of exit temperature (TS) and exit velocity (VS) for each stack were obtained after comparing the actual fuel consumption with the boiler capacity factor given on the FPC Form 67 for each boiler to determine a load factor (LF). Exit temperatures and exit velocities for each stack are given for 50, 75, and 100 percent loads. The following criteria were established:

If LF > 87% use TS = $T_{100\%}$ and VS = $V_{100\%}$

If 62% $\leq$ LF $\leq$ 87% use TS = $T_{75\%}$ and VS = $V_{75\%}$

If LF < 62% use TS = $T_{50\%}$ and VS = $V_{50\%}$

Total daily SO_2 emissions in tons SO_2/day were available for each unit of the Kingston Power Plant from the Tennessee Valley Authority in Muscle Shoals, Alabama. These data had been computed by TVA assuming that 90 percent of the sulfur in the coal was converted to SO_2 when the coal was burned. Average capacity factors for each month were used to determine which values of exit temperature and velocity were to be used in model calculations.

The meteorological data presented a more formidable problem than emission data because of the inherent variability in meteorological conditions in comparison to plant operating conditions (which are reported to be relatively constant from day to day). A one-year record of complete 1-hour average meteorological conditions was assembled for each plant site that was analyzed.

2.1 SOURCES OF METEOROLOGICAL DATA

2.1.1 Shawville

A meteorological tower near the Shawville plant provided wind speed and direction from the 91 m level as well as wind speeds at 12 m. Temperatures measured at 91 and 12 m were used for temperature gradients, and ambient temperatures from 12 m were used in modeling. Three-hour Williamsport cloud cover and ceiling heights were used for Shawville, while mixing heights applicable for the Shawville region were obtained by interpolation between the three surrounding radiosonde stations - Pittsburgh, Albany, and Philadelphia.

2.1.2 Seward

Meteorological data for the Seward Power Plant operated by Pennsylvania Electric were obtained from a tower located at the top of Penn View Mountain which is approximately 10 km northwest of the Seward plant. Wind speed and direction data were taken at the 91 m level of the Penn View tower. Wind directions for each hour were averaged to the nearest degree. Wind speed data were also obtained for the 12 m level for use in stability class determination. Hourly temperature gradients were based on measurements at the 60 and 12 m tower heights. Ambient temperature from the 12 m level was used. No solar radiation data was available for this region for 1975. Cloud cover, ceiling height, and mixing heights from the National Weather Service station at the Greater Pittsburgh Airport were applied as model inputs for the plant.

2.1.3 Kingston

The Kingston Power Plant had the most complete meteorological observation system of those utilized in this study. Two meteorological towers provided much of the hourly data necessary for the modeling of SO_2 concentrations near the Kingston plant. The Kingston Valley tower, located approximately 0.5 km east of the plant with its base about 30 m above plant grade, provided wind speed data from the 10 m level for use in stability class determination, solar radiation data, atmospheric pressure readings, and ambient temperature data also from the 10 m level. The Kingston Heights meteorological tower operated by TVA, located 2.6 km to the southwest of the plant and at an elevation approximately 122 m higher than plant grade, provided wind speed and direction data from the 45 m tower level, σ_θ and σ_z

also from the 45 m level, and temperature data for 45 m and 10 m. Cloud amount and ceiling height data were available every third hour from the National Weather Service station at Knoxville, Tennessee. Mixing heights computed from the radiosonde data taken at Nashville were obtained from the Air Pollution Control section of the Nashville Metropolitan Health Department. The preparation steps which were taken with regard to each meteorological parameter to obtain a complete and accurate set of values are described below.

2.2 METEOROLOGICAL PARAMETERS

2.2.1 Wind

Wind direction was considered to be the most critical parameter. As a result attempts were made to obtain wind measurements from a location close to each plant which is representative of the direction of travel of the stack plumes. At all plant sites, measurements were available from nearby towers on ridges which are representative of the plume travel direction a large percentage of the time.

In order to obtain wind estimates for missing hours, alternate measuring locations are specified as second, third and fourth choices to supply missing values. If the period of missing values is less than 6 hours, the missing values are estimated by interpolation; otherwise, the alternate sources of data are used.

Wind speeds reported as less than 1.0 m/sec are set equal to 1.0 m/sec. Wind directions which are reported to an increment greater than 1 degree azimuth are randomized to a value within the increment to

the nearest degree. This is done by subtracting one-half the increment from the reported value and adding to the results the product of a random number between 0 and 1 times the increment. If the wind direction is reported only as variable, the increment is assumed to be 360°. A small percentage of the annual observations were reported as variable.

2.2.2 Atmospheric Stability

Atmospheric stability for each hour was determined from one of two types of data: either vertical temperature gradients measured on towers or cloud observations observed at airports. The vertical temperature gradients corresponding to the four Brookhaven stability categories are shown below:*

Stability Category	$\frac{\partial T}{\partial z}$ (°C/100m)	Pasquill Stability Class
Very unstable	< -1.9	A
Unstable	-1.5 to -1.9	B and C
Neutral	-0.5 to -1.5	D
Stable	> -0.5	E and F

In cases characterized by missing vertical temperature gradient data, Pasquill stability categories, determined by windspeed and cloudcover were converted into Brookhaven categories.

2.2.3 Mixing Height

Mixing height, the height above ground level to which air in the vicinity of the ground is mixed, is determined from balloon-borne temperature sondes. Such measurements are taken twice daily at certain airports

* Methods of relating the Brookhaven stability categories to the measures of stability recently recommended by the American Meteorological Society (Turner et al. 1977) have not yet been developed. The relationships used represent the best currently available techniques of relating the Brookhaven parameters to meteorological measurements.

and, until 1974, at some metropolitan areas. From these soundings the height of the mixing layer is determined by testing how high a parcel of air released at the surface will rise before further rise is strongly suppressed by buoyancy forces. Estimates of the mixing height derived by local air quality control agencies were interpolated in time over a 24-hour period to get hourly estimates using the following guidelines: the morning estimate is assumed to be applicable for the hours between midnight to 7 AM. The afternoon estimate is assumed to be applicable for the hours from 2 PM to midnight. Values for the hours between 7 AM and 2 PM are determined by linear interpolation between the morning and afternoon estimates. The mixing heights were spatially interpolated to individual plant sites using two or three point interpolation, depending on which was most appropriate for each plant.

2.2.4 Temperature

Ambient air temperatures for each plant site were determined from the closest available measurement. An alternate source was used to fill in missing values. Since this parameter has the least impact on the model calculation, if the primary and secondary sources were missing, a value of 283°K was substituted.

2.3 BACKGROUND INFORMATION

Background concentrations of SO_2, NO_x and TSP were determined for each plant site under study for which monitoring data were suitable. Background concentrations of these pollutants are defined to be the contribution to the ambient SO_2, NO_x and TSP concentrations not due to the major emissions

by the plant whose impact is being analyzed. The background data were obtained from three primary sources; monitoring networks in the vicinity of the plants, the Pennsylvania 1975 Air Quality Surveillance Survey System Air Quality Report, and EPA Air Quality data quarterly statistics. Day-to-day variations in background levels have not been included in the model estimates. The background concentrations utilized for this study are shown in Table 1.

Table 1. Background Concentrations ($\mu g/m^3$) for Each of the Three Pollutants at Each of the Three Power Plants Utilized in the Model Runs

Plant	Background ($\mu g/m^3$)		
	Annual Arithmetic Mean		Annual Geometric Mean
	SO_2	NO_x	Particulate
Shawville	34	52	75
Seward	45	52	75
Kingston	13	40	65

Background values are added to the model-derived concentrations to provide the resultant pollutant concentration at each receptor in the print-outs. Note that the particulate background values for the Shawville and Seward plants are at the Federal primary annual geometric mean NAAQS of 75 $\mu g/m^3$.

Since the objective of this study is to assess the relative impact on pollutant concentrations as a result of switching from coal to SRC, the background concentration values are not such an important aspect of determining the air quality impact resulting from the switch to SRC.

Section 3.0

PLANT EMISSION SRC CALCULATIONS

3.1 SRC TEST BURN DATA

A three-phase combustion test at the Georgia Power Company's Mitchell Plant, located near Albany, Georgia, was performed to determine whether SRC can be burned in a pulverized coal-fired boiler. In Phase I of this program, low sulfur Kentucky coal was burned in the existing, unmodified 22-1/2 MW coal boiler. Phase II of the test was conducted upon replacement of the original burners with dual register burners and accompanying modifications and utilizing similar low-sulfur Kentucky coal. Following adjustment of the burners and the pulverizers, SRC was burnt for the Phase III test. The SRC was produced at the Fort Lewis pilot plant from western Kentucky coals having a sulfur content of approximately 4 percent and an ash content of 10 to 12 percent. Sulfur and ash in the SRC were nominally 0.6 and 0.1 percent respectively. In each of the three phases of the program, the boiler was operated at full (approximately 21 MW), medium (approximately 14 MW), and low (approximately 7 MW) load conditions. Details concerning the sampling procedure may be found in a paper from Hittman Associates, presenting preliminary results of available analyses (see Appendix C). The paper contains the data utilized in plant emission SRC calculations, showing the conditions and combustion test parameters for each of the SRC runs, and is incorporated as Appendix C of this report.

3.2 CALCULATION OF SO_2 COAL EMISSION RATES FOR EACH POWER PLANT

GEOMET maintains an in-house program which compiles coded FPC Form 67 data to input format of the CRSTER program. For each plant the input parameters include the number of boilers, number of stacks, monthly sulfur content in coal for each boiler, monthly coal consumption at each boiler, boiler capacity factor, design consumption data, stack parameters such as height and diameter as well as temperatures and stack exit velocities for 100, 75 and 50 percent loads. The program outputs an SO_2 emission rate for each stack, monthly variation factors and suggests five ring distances for the plant receptors. These distances are manually altered to accommodate nearby large-scale topographic features upon which the plant plume may impact.

3.2.1 Calculation of SRC SO_2 Emission Rates Based on Mitchell Test Burn Data

Six SRC test run cases contained the complete information required to derive an SRC SO_2 emission factor. These six cases were averaged to provide a mean heating value, a mean SO_2 emission per unit heat output, and a mean percentage sulfur in the SRC fuel. The SRC emission factor for SO_2 was then computed as follows:

$$\text{Heating Value } \frac{\text{BTU}}{\text{lb}} \text{ SRC} \times \frac{\text{lb } SO_2}{10^6 \text{ BTU}} = \text{SRC emission factor } \left(\frac{\text{lb } SO_2}{\text{lb SRC}}\right)$$

The SRC SO_2 emission factor was then applied to each of the three power plants. FPC Form 67 for the year 1975 was used for each of the power plants to obtain the necessary annual coal consumption data for each plant boiler.

The annual coal consumed was converted into an equivalent SRC SO_2 emission rate for each plant stack as follows:

$$\frac{\text{lb SRC}}{\text{hr}} = \frac{\text{lb}}{\text{hr}} \text{ coal} \times \frac{\text{BTU}}{\text{lb}} \text{ coal (for plant in question)} \times \frac{\text{lb}}{\text{BTU}} \text{ SRC}$$

$$\frac{\text{lb } SO_2}{\text{hr}} = \frac{\text{lb SRC}}{\text{hr}} \times \text{SRC emission factor } \frac{\text{lb } SO_2}{\text{lb SRC}} \times \text{SRC Percent Sulfur}$$

These SO_2 emission rates were converted to grams per second for input into the Air Quality Model.

3.3 COMPUTATION OF NO_x EMISSION RATES FOR EACH POWER PLANT

NO_x emission rates for the three power plants for the case of conventional coal burning were derived from FPC yearly coal consumption data and a nitrogen oxide emission factor suggested by EPA's AP-42 Compilation of Air Pollutant Emission Factors for tne case of a large industrial pulverized (general) boiler. For each plant boiler, the annual coal consumption was multiplied by the NO_x emission factor of 18 lb/ton (9 kg) coal to give an annual boiler NO_x emission rate.

The derivation of NO_x emission factor for SRC was somewhat more complicated than for other pollutants, such as SO_2. This complication stems from the fact that formation of NO_x is highly temperature-dependent. Emissions of NO_x permit an amount of fuel increase with size of the boiler since large boilers usually have higher operating temperatures. In order to include the size-dependencies, the NO_x emission factor computed based on Mitchell test burn data (Section 3.3.1) was corrected for each plant with scaling factors (Section 3.3.2).

3.3.1 Calculation of SRC NO_x Emission Rates Based on Mitchell Test Burn Data

An average NO_x SRC emission factor was derived using the same methodology applied to the test burn data which resulted in the SO_2 emission factor. The SRC emission factor for NO_x was computed as follows:

$$NO_x \text{ Emission Factor } \frac{\text{lb}}{\text{lb SRC}} = \text{Heating Value } \frac{\text{BTU}}{\text{lb}} \text{ SRC} \times \frac{\text{lb } NO_x}{10^6 \text{ BTU}}$$

The SRC NO_x emission factor was then applied to each of the three power plants. FPC Form 67 for the year 1975 was used for each of the power plants to obtain the necessary annual coal consumption data for estimation of the SRC consumption rate for each plant boiler. This quantity was multiplied by the EPA NO_x emission factor, the percentage nitrogen of the SRC, and converted into units of grams per second NO_x.

3.3.2 Computation of a Scaling Factor for NO_x to be Applied to SRC Cases

Figure 1 (Hangebrauck et al. 1964) relates oxides of nitrogen emission to furnace heat input and shows that the rate of NO_x emission is a power function of the gross heat input with an exponent greater than 1.0, implying that larger units produce more NO_x on a pound-per-BTU basis. The effect is to be expected since higher temperatures in these units are a major factor in producing increased NO_x emissions. The respective plant generating capacities were converted to gross heat input values and the

following equation applied to provide the pounds of NO_x emitted per hour for each plant:

$$\text{Log } NO_x = 1.138 \text{ Log (Heat Input)} - 7.553$$

The scale factors given in Table 2 were used to compute SRC NO_x emission rates.

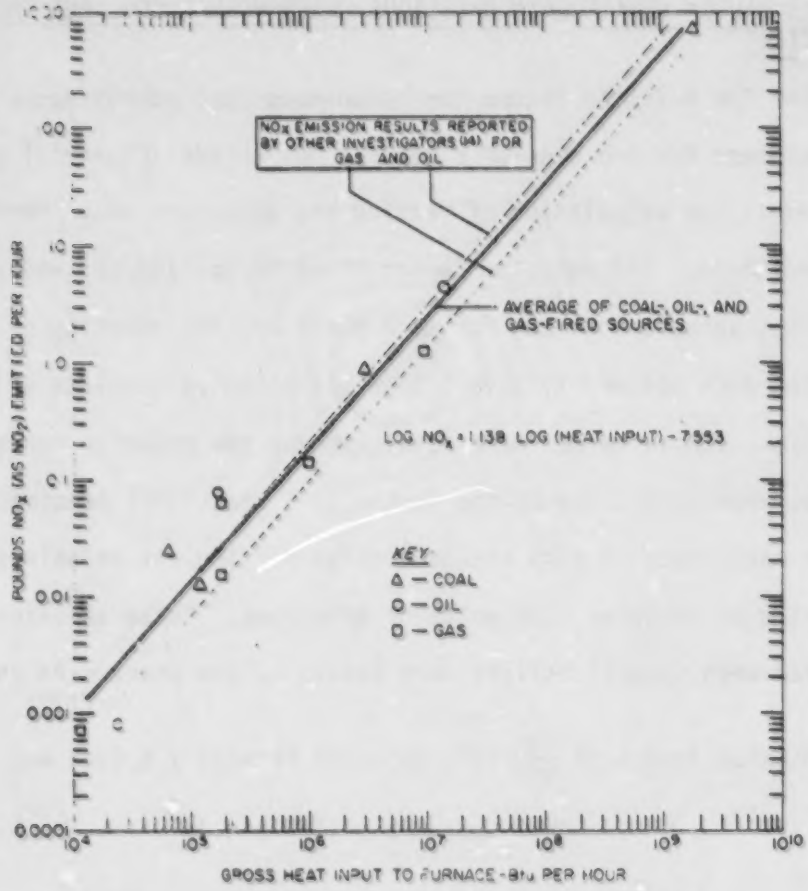


Figure 1. Relationship of Oxides of Nitrogen Emissions to Furnace Heat Input.

Table 2. Comparison of Plant Capacities, Heat Inputs, Calculated lb/hr NO_x, and Derived Scale Factors for All Plants

Plant	Plant Capacity (MW)	Heat Input (BTU/hr)	lb/hr NO_x	NO_x lb/10^6 BTU	Scale Factor
Kingston	1700	1.66×10^{10}	11953	0.72	1.83
Shawville	640	6.24×10^{9}	3925.7	0.629	1.60
Seward	268.2	2.62×10^{9}	1462.26	0.558	1.42
Mitchell	21.5	2.10×10^{8}	82.73	0.394	1.0

3.4 CALCULATION OF PARTICULATE EMISSIONS UNDER NORMAL COAL BURNING CONDITIONS

The EPA emission factor for bituminous coal combustion without control equipment for the case of a general pulverized industrial boiler was utilized in the calculation of particulate emissions under normal coal burning conditions. The emission factor of 16 lb/ton (8g/kg) was multiplied by the average percent coal ash for each plant and the quantity of coal consumed (for each boiler) to give the uncontrolled particulate emissions for each stack. These values were multiplied by the emission for each stack. These values were multiplied by the factor (1 - fractional precipitator efficiency) for each stack to give the controlled particulate emissions, which were converted to emission rate units of grams/sec. These emission rates were combined when several boilers were served by one stack. As an example:

$$\text{Emission Rate} = 16 \frac{\text{lb}}{\text{ton}} \text{ (EPA Emission Factor)} \times \% \text{ Coal Ash}$$

$$\times \text{ Coal Consumed} \times (1 - \text{eff.})$$

3.4.1 Calculation of Particulate Emission Under Normal SRC Burning Conditions

The ash content of SRC was substantially lower than that of conventional coal (0.1 percent as compared to 10 to 15 percent for conventional coal). Results of the Mitchell test burn were not useful due to insufficient data. Sampling flow rates were not available. Emission samples for the SRC test burn were collected at the outlet of precipitator #1. This precipitator was a 1946 vintage unit with a reported efficiency of 20 percent for the SRC test burn. A comparable efficiency for conventional coal for the precipitator #1 was not known.

For the SRC particulate emission factor, it was determined that all the ash would be emitted since no bottom ash was collected in the SRC test burn. (EPA emission factor for coal assumes 20 percent of ash is not emitted.) To obtain controlled emissions, a factor which accounts for differences in collection of coal fly ash and SRC fly ash was used based on data for precipitator #3. Precipitator #3 was found to have an efficiency of 98.5 percent for coal and an efficiency of 95 percent for SRC.

For each boiler of the Shawville, Seward and Kingston power plants, the controlled particulate emissions for an assumed SRC burn were computed as follows:

$$\text{Controlled Emissions SRC} = [1 - (\text{Eff. for Coal}) \times (\text{Efficiency Correction Factor for SRC})] \times \text{Tons of Coal} \times \frac{\text{BTU/lb Coal}}{\text{BTU/lb SRC}} \times \text{Ash Content SRC}$$

The ratio of the Mitchell precipitator #3 efficiency for SRC to that of coal (i.e., 0.95/0.985) was used as the correction factor for SRC in the calculations.

3.4.2 Calculation of Particulate Emissions Under Maximum Load Coal Burning Conditions and SRC Burning Conditions

To compute the particulate emission rates for maximum load coal burning conditions for each boiler, the following relationship was used since the particulate emissions are proportional to the SO_2 emissions for different load conditions:

$$\text{Maximum Particulate Emission Rate for Coal} = \frac{\text{Normal Coal Particulate Emission Rate} \times \text{Maximum } SO_2 \text{ Emission Rate for Coal}}{\text{Normal } SO_2 \text{ Emission Rate for Coal}}$$

Similarly, for computing the particulate emission rates for maximum load SRC burning conditions, the following relationship was used:

$$\text{Maximum Particulate Emission Rate for SRC} = \frac{\text{Normal SRC Particulate Emission Rate} \times \text{Maximum } SO_2 \text{ Emission Rate for SRC}}{\text{Normal } SO_2 \text{ Emission Rate for SRC}}$$

Table 3 is a summary of all of the emission rates derived for each of the three pollutants under varied coal and SRC load conditions for each of the three power plants. Also included are the stack exit temperatures, stack exit velocities and background values used for input into the Gaussian dispersion model.

Table 3. Summary of Emission Rates Derived for Each of the Three Pollutants under Varied Coal* and SRC** Load Conditions and the Stack Exit Velocity and Temperatures Utilized in the Model Runs

Parameter	Stack	Coal - Normal Emission			Coal - Maximum Emission			SRC - Normal Emission			SRC - Maximum Emission			Background ($\mu g/m^3$)
		Emission Rate (g/s)	Exit Temperature (°K)	Exit Velocity (m/s)	Emission Rate (g/	Exit Temperature (°K)	Exit Velocity (m/s)	Emission Rate (g/s)	Exit Temperature (°K)	Exit Velocity (m/s)	Emission Rate (g/s)	Exit Temperature (°K)	Exit Velocity (m/s)	
Shawville														
SO_2	1	615	391	21.8	1001	403	29.4	254	391	21.8	312	403	29.4	34
	2	1220	386	18.8	1461	396	22.5	397	386	18.8	476	396	22.5	
NO_x	1	176	391	21.8	216	403	29.4	168	391	21.8	206	403	29.4	52
	2	275	386	18.8	329	396	22.5	261	386	18.8	313	396	22.5	
Particulate	1	83	391	21.8	102	403	29.4	1.12	391	21.8	1.4	403	29.4	75
	2	269	386	18.8	322	396	22.5	2.74	386	18.8	3.3	396	22.5	
Seward														
SO_2	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
NO_x	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Particulate	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Kingston														
SO_2	1-4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5-9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
NO_x	1-4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5-9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Particulate	1-4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	5-9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

* Coal containing 0.80% sulfur, 1.57% nitrogen and 9.0% ash

** SRC containing 0.70% sulfur, 1.65% nitrogen and 0.1% ash

Table 4 shows the percent reduction in emission rates under normal load conditions realized for all three pollutants as a result of the switch-over from coal to SRC at the three power plants.

It is evident that significant reductions occur in the emissions of SO_2 and particulates when SRC is substituted for regular coal at each of the three power plants. The large reductions in particulate emission rates are related to differences in the ash content and the BTU content of SRC.

Table 4. Percentage Reduction in Emission Rates as a Result of the Switch to SRC Coal

Plant	Pollutant Emission	Stack	Coal (g/s) Normal*	SRC (g/s) Normal**	Percent Reduction
Shawville	SO_2	1	615	204	69
		2	1220	397	68
	NO_x	1	178	168	3
		2	275	261	3
	TSP	1	83	1.32	99
		2	389	2.74	99
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]
	TSP	[illegible]	[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]	[illegible]

* Sulfur and ash content of present plant fuels are as follows:

	Ash (%)	Sulfur (%)
Shawville	13.5	2.2
Seward	15.6	2.5
Kingston	18.4	2.3

** The SRC fuel contains 0.7% sulfur, 1.65% nitrogen and 0.19% ash.

Section 4.0

ANALYSIS OF AIR QUALITY RESULTS

This section describes air quality modeling results for SO_2 and particulates using the modified CRSTER model. Although the model was run for cases of NO_x, uncertainties in the photochemistry and the scaling techniques employed for this pollutant serve to lower our confidence in both calculated emissions and ambient concentrations of NO_x for both coal and SRC cases at each of the power plants. Consequently, little analysis was attempted for NO_x modeling results, but the detailed NO_x concentration data are included in computer printouts in Appendix B. The printouts contain information about identified maximum concentration values, 3-hour, 24-hour and annual averaging periods for both fuel types and normal and maximum load conditions for SO_2, NO_x and TSP at each of the power plants. It must be remembered that in general, Gaussian models show greater overestimation near the plant, while being within a factor of two at greater distances.

4.1 IDENTIFICATION OF MAXIMUM ANNUAL 24-HOUR SO_2 CONCENTRATIONS, EXCEEDANCES OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS, AND COMPARISON OF COAL AND SRC BURNS AT EACH POWER PLANT

4.1.1 Shawville - 24-hour SO_2 Concentrations

The highest annual 24-hour SO_2 concentration for the case of the Shawville plant utilizing regular coal, 681 $\mu g/m^3$, is found to impact north of the plant (360°) at a distance of 0.83 km. Of the 20 maximum 24-hour SO_2 concentrations generated by the Gaussian model, 30 percent are found to lie to the north of the plant, within the first two selected rings (0.83, 1.66 km). Sixty-five percent of the 20 maximum SO_2

concentrations impacted on the first ring. Secondary maxima are found to occur in the 100°-140° sector, at distances close to the plant.

Of the 20 maximum 24-hour SO_2 concentrations, all were found to violate the National Ambient Air Quality Standard of 365 $\mu g/m^3$, with the generated values ranging from a maximum of 680 $\mu g/m^3$, to 372 $\mu g/m^3$.

With a switch in fuel type to SRC, each of the 20 maximum 24-hour SO_2 concentrations are brought into compliance down below the NAAQS, with the generated values ranging from a maximum of 243 $\mu g/m^3$, to 143 $\mu g/m^3$. The change over to SRC results in reductions in the 20 top 24-hour SO_2 concentrations on the order of 60 percent to 65 percent.

4.1.2 Seward - 24-Hour SO_2 Concentrations

The highest annual 24-hour SO_2 concentration for the case of the Seward plant utilizing regular coal, 350 $\mu g/m^3$ is found to impact northwest of the plant (300°) at a distance of 2.75 km. Of the 20 maximum 24-hour SO_2 concentrations generated by the Gaussian model, 30 percent are found to lie to the east-northeast of the plant (80°), falling on the 2.75 and 3.65 km ring distances. Forty-five percent of the 20 maximum SO_2 concentrations impacted on the second ring (2.75 km). Secondary maxima are found to occur in the 250° to 360° sector at 1.17 to 5.25 km from the plant.

Of the 20 maximum 24-hour SO_2 concentrations, none were found to violate the National Ambient Air Quality Standard of 365 $\mu g/m^3$, with the generated values ranging from a maximum of 350 $\mu g/m^3$, to 251 $\mu g/m^3$.

With a switch in fuel type to SRC, each of the 20 maximum 24-hour SO_2 concentrations remain below the NAAQS with the generated values ranging

from a maximum of 126 $\mu g/m^3$ to 100 $\mu g/m^3$. The changeover to SRC results in reductions in the 20 maximum 24-hour SO_2 concentrations on the order of 61 to 65 percent.

4.1.3 Kingston - 24-Hour SO_2 Concentrations

The highest annual 24-hour SO_2 concentration for the case of the Kingston power plant utilizing regular coal, 1951 $\mu g/m^3$, is found to impact north of the plant (360°) at a distance of 1.33 km (Ring #2). Of the 20 maximum 24-hour SO_2 concentrations generated by the Gaussian model, 50 percent are found to lie to the north of the plant (360°), falling on the first and second rings (0.71 and 1.33 km). Secondary maxima are found to occur to the southeast (160°) at the first ring; 30 percent of the 20 maximum 24-hour SO_2 concentrations fall into this category.

Of the 20 maximum 24-hour SO_2 concentrations, all were found to grossly violate the National Ambient Air Quality Standard of 365 $\mu g/m^3$ with the generated values ranging from a maximum of 1951 $\mu g/m^3$ to 1178 $\mu g/m^3$.

With a switch in fuel type to SRC, and assuming that normal stack exit temperatures and exit velocities remain the same, a 72 percent reduction in SO_2 concentrations is realized. Of the 20 maximum 24-hour concentrations, 65 percent of them still exceed the NAAQS. If the fuel switch to SRC were to be accompanied by a stack exit velocity 25 percent greater than the normal stack exit velocity for coal, a 77 percent reduction in SO_2 concentrations is realized. Of the 20 maximum 24-hour concentrations, 25 percent of them exceed the NAAQS. Minor differences result in the direction of some of the impact cases for the 20 maximum 24-hour concentrations with the

increased velocity, although the impact distances remain essentially the same. Table 5 summarizes the frequencies of exceeding the 24-hour NAAQS for SO_2 for normal load and maximum load conditions at each of the three power plants.

Table 5. Frequency of Exceeding 24-Hour Standard for SO_2 Based on 1975 Operating Levels for Regular Coal and for SRC Combustion

Plant	Fuel	Estimated Number of Exceedances Per Year of Federal 24-Hour Standard (i.e., 365 $\mu g/m^3$)	
		Normal Load	Maximum Load
Shawville	Coal (2.2%S)	20	18
	SRC (0.7%S)	0	0
Seward	Coal (2.5%S)	0	6
Seward	SRC (0.7%S)	0	0
Kingston	Coal (2.3%S)	20	20
Kingston	SRC*(0.7%S)	13	12
Kingston	SRC**(0.7%S)	5	6

* Stack exit velocity assumed to be the same as the coal case.
** Stack exit velocity assumed to increase by 25 percent.

4.2 IDENTIFICATION OF MAXIMUM ANNUAL MEAN SO_2 CONCENTRATION EXCEEDANCES OF NAAQS AND COMPARISON OF COAL AND SRC BURNS AT EACH POWER PLANT

4.2.1 Shawville - Annual Mean SO_2 Concentrations

The highest maximum annual mean SO_2 concentration for the case of the Shawville Plant utilizing regular coal, 60 $\mu g/m^3$ is found to impact

in a direction east-southeast of the plant (100°) at a distance of 0.8 km. The NAAQS of 80 $\mu g/m^3$ for the one year is not violated.

With a switch in fuel type to SRC the highest maximum annual mean SO_2 concentration appears at the same distance and direction and is reduced approximately 30 percent to a value of 42 $\mu g/m^3$. Isopleth charts for the two cases of SO_2 concentrations resulting from coal and SRC burns at the Shawville plant follow in Figures 2 and 3, respectively.

4.2.2 Seward - Annual Mean SO_2 Concentrations

The highest maximum annual mean SO_2 concentrations for the case of the Seward Plant utilizing regular coal, 64 $\mu g/m^3$, is found to impact in a direction east-northeast of the plant (80°) at a distance of 3.7 km. The NAAQS of 80 $\mu g/m^3$ for one year is not violated.

With a switch in fuel type to SRC, the highest maximum mean SO_2 concentration appears at the same distance and direction and is reduced 22 percent to a value of 50 $\mu g/m^3$. Isopleth charts for the two cases of SO_2 concentrations resulting from coal and SRC burns at the Seward plant follow in Figures 4 and 5.

4,2.3 Kingston - Annual Mean SO_2 Concentrations

The highest maximum annual mean SO_2 concentrations for the case of the Kingston Plant utilizing regular coal, 150 $\mu g/m^3$ is found to impact in a direction north of the plant (360°) at a distance of 0.7 km. The primary NAAQS of 80 $\mu g/m^3$ SO_2 for one year is violated at this plant. Four violations are found out of the total of 180 receptor locations; these violations occur within 1.3 km of the Kingston plant to the north and northeast.

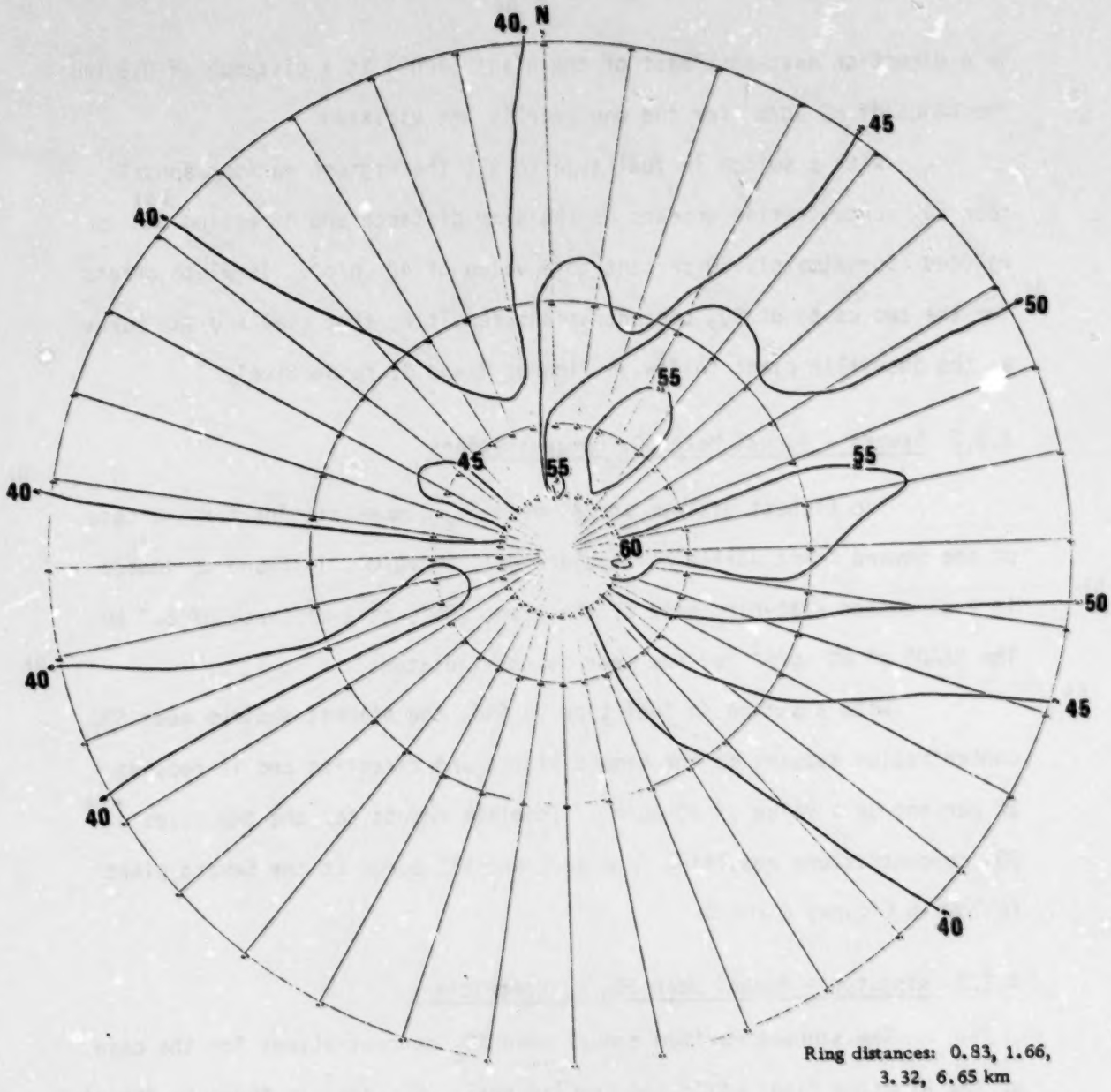
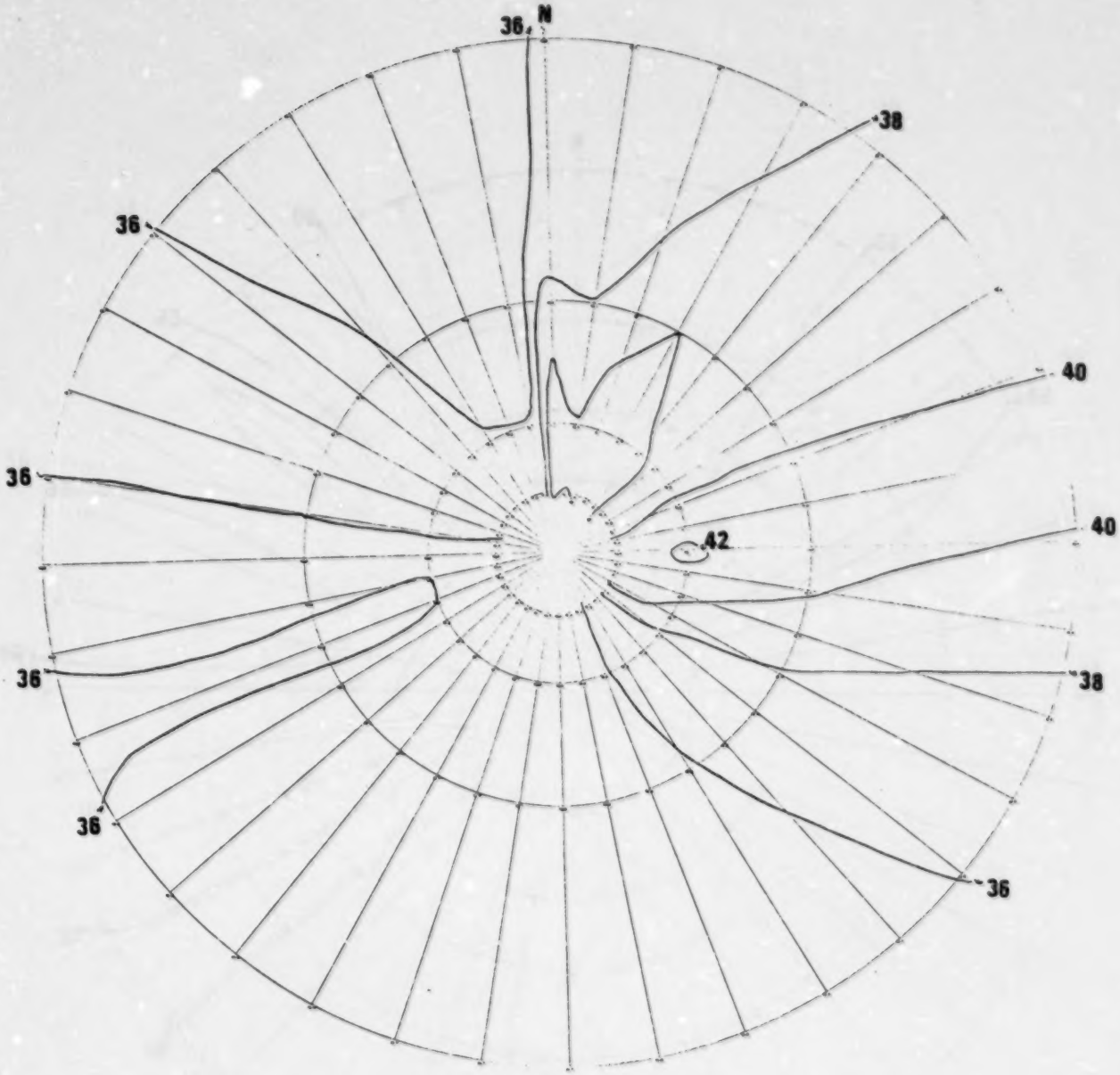


Figure 2. Predicted Annual Average SO_2 Concentrations in Vicinity of the Shawville Plant During Coal Burn ($\mu g/m^3$)



Ring distances: 0.83, 1.66, 3.32, 6.65 km

Figure 3. Predicted Annual Average SO_2 Concentrations in Vicinity of the Shawville Plant During SRC Burn ($\mu g/m^3$)

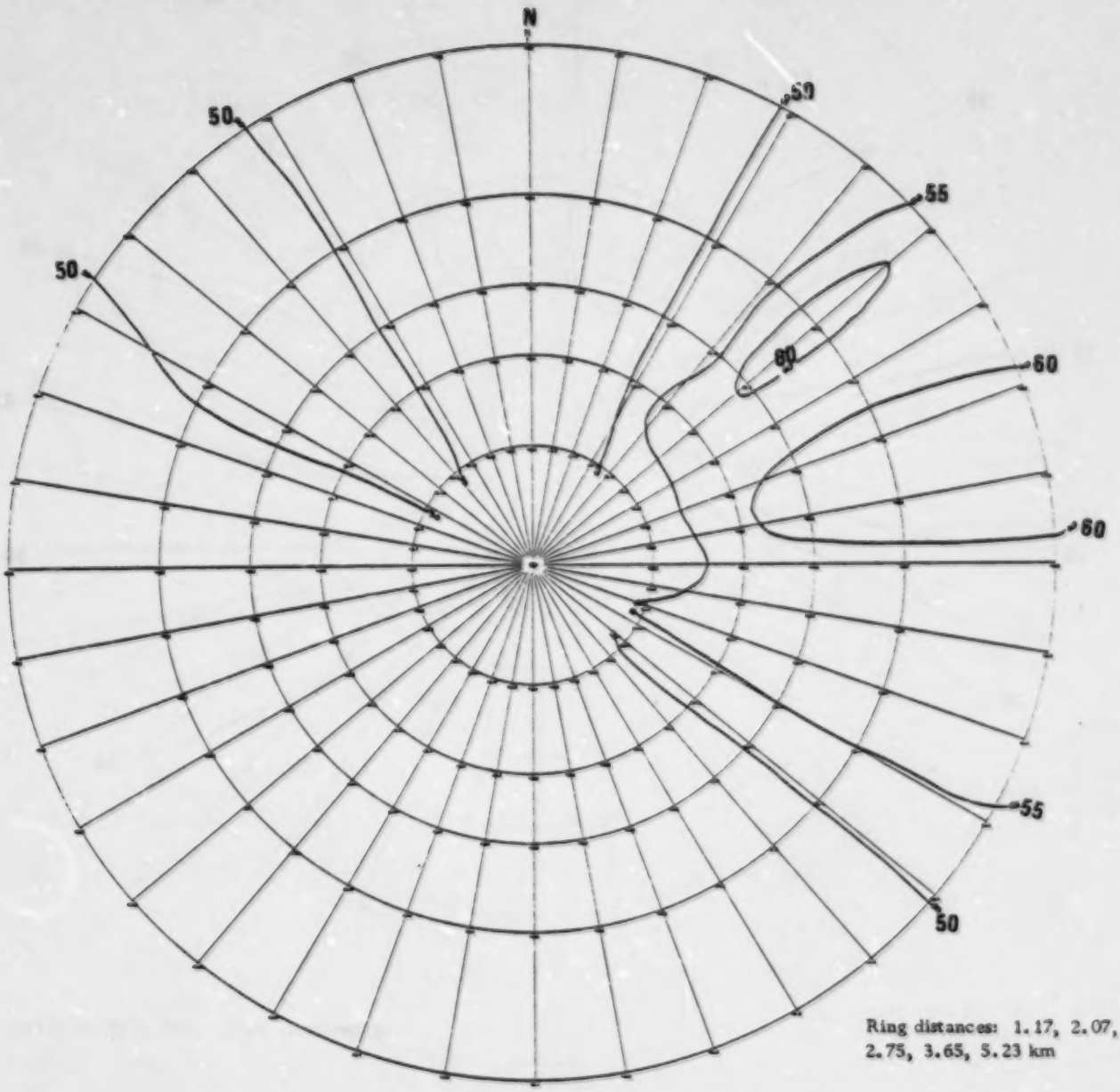


Figure 4. Predicted Annual Average SO_2 Concentrations in Vicinity of the Seward Plant During Coal Burn ($\mu g/m^3$)

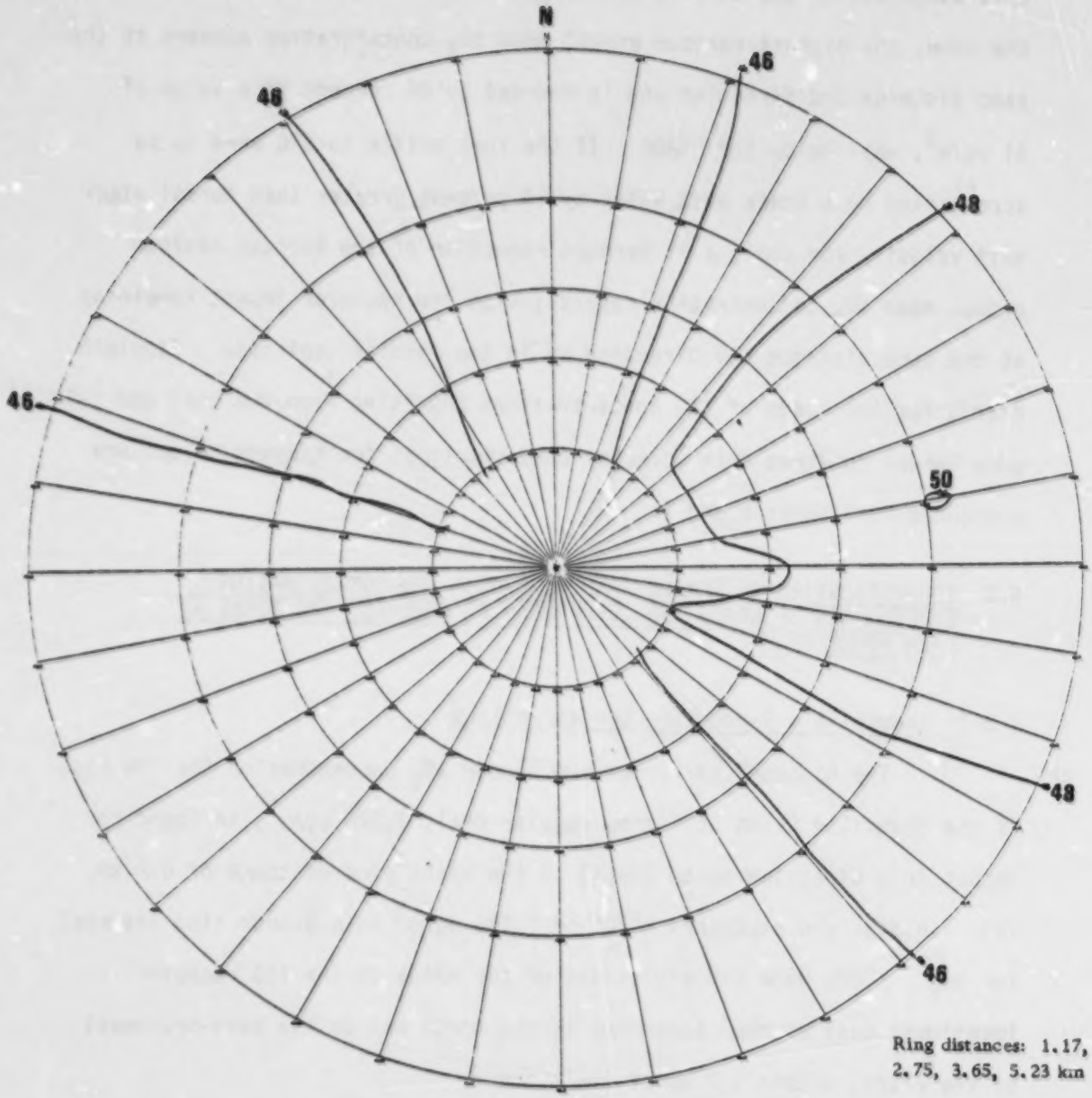


Figure 5. Predicted Annual Average SO_2 Concentrations in Vicinity of the Seward Plant During SRC Burn ($\mu g/m^3$)

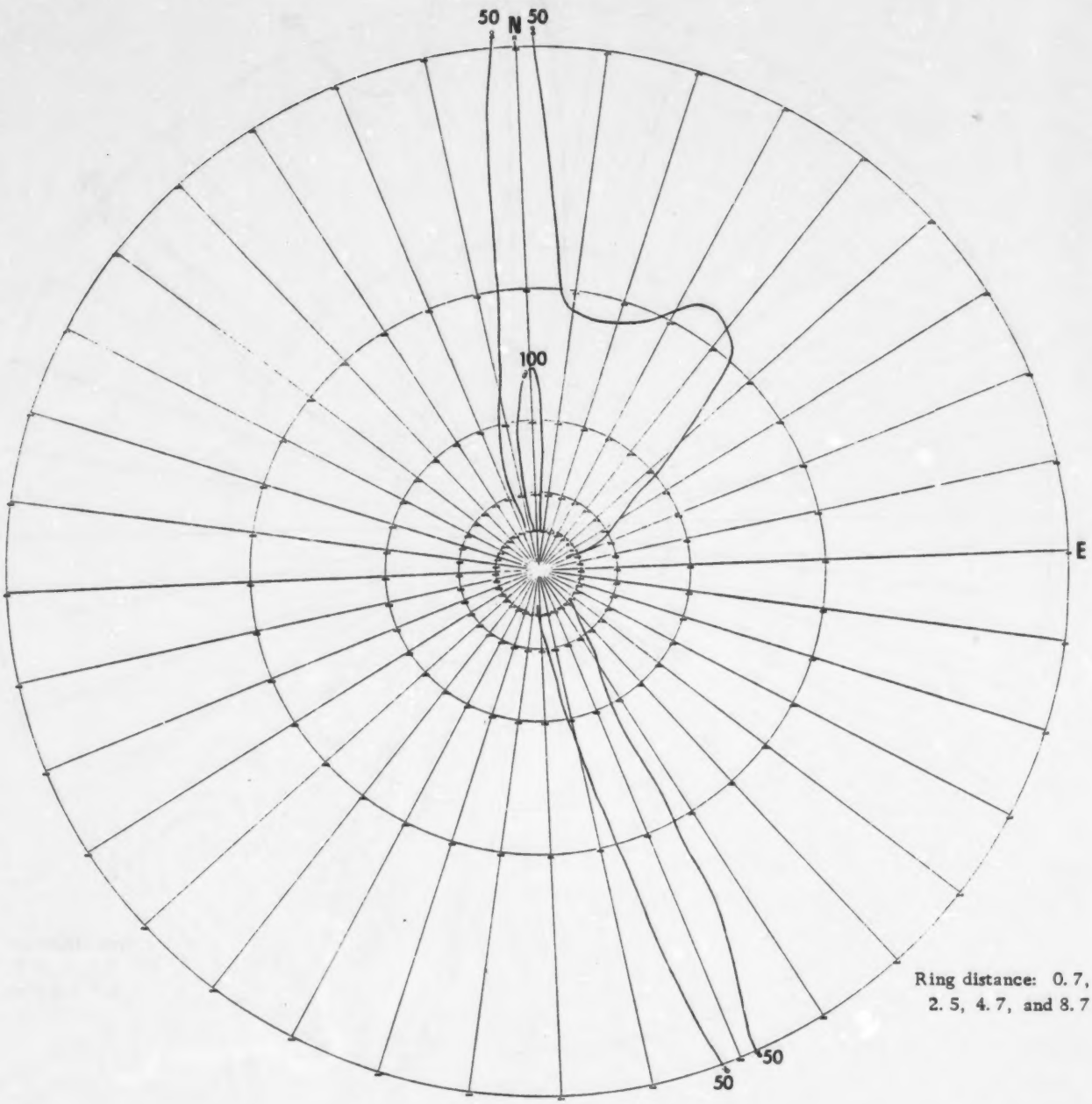
With a switch in fuel type to SRC, and assuming that the stack exit temperatures and exit velocities under normal load conditions remain the same, the highest maximum annual mean SO_2 concentration appears at the same distance and direction and is reduced by 66 percent to a value of 51 $\mu g/m^3$, well below the NAAQS. If the fuel switch to SRC were to be accompanied by a stack exit velocity 25 percent greater than normal stack exit velocity for coal, a 71 percent reduction of the highest maximum annual mean SO_2 concentration results, with the receptor impact remaining at the same distance and direction as in the regular coal case. Isopleth charts for the cases of SO_2 concentrations resulting from the coal and SRC burn (under constant exit velocity conditions) at the Kingston Plant are presented in Figures 6 and 7.

4.3 IDENTIFICATION OF MAXIMUM ANNUAL 3-HOUR SO_2 CONCENTRATIONS, EXCEEDANCES OF NAAQS AND COMPARISON OF COAL AND SRC BURNS AT EACH POWER PLANT

4.3.1 Shawville - 3-Hour SO_2 Concentrations

The highest yearly maximum 3-hour SO_2 concentration for the case of the Shawville Plant utilizing regular coal, 2,226 $\mu g/m^3$, is found to impact in a direction north (360°) of the plant at a distance of 0.8 km. This violates the secondary NAAQS of 1,300 $\mu g/m^3$ in a 3-hour time interval for SO_2. There were six violations of the NAAQS at the 180 receptor locations, most of them occurring to the north and to the east-southeast of the plant, within 1.7 km of the plant.

With a switch in fuel type to SRC, the highest yearly maximum 3-hour SO_2 concentration is found to be 741 $\mu g/m^3$, representing a reduction



Ring distance: 0.7, 1.3, 2.5, 4.7, and 8.7 km

Figure 6. Predicted Annual Average SO_2 Concentrations in Vicinity of the Kingston Plant During Coal Burn ($\mu g/m^3$)

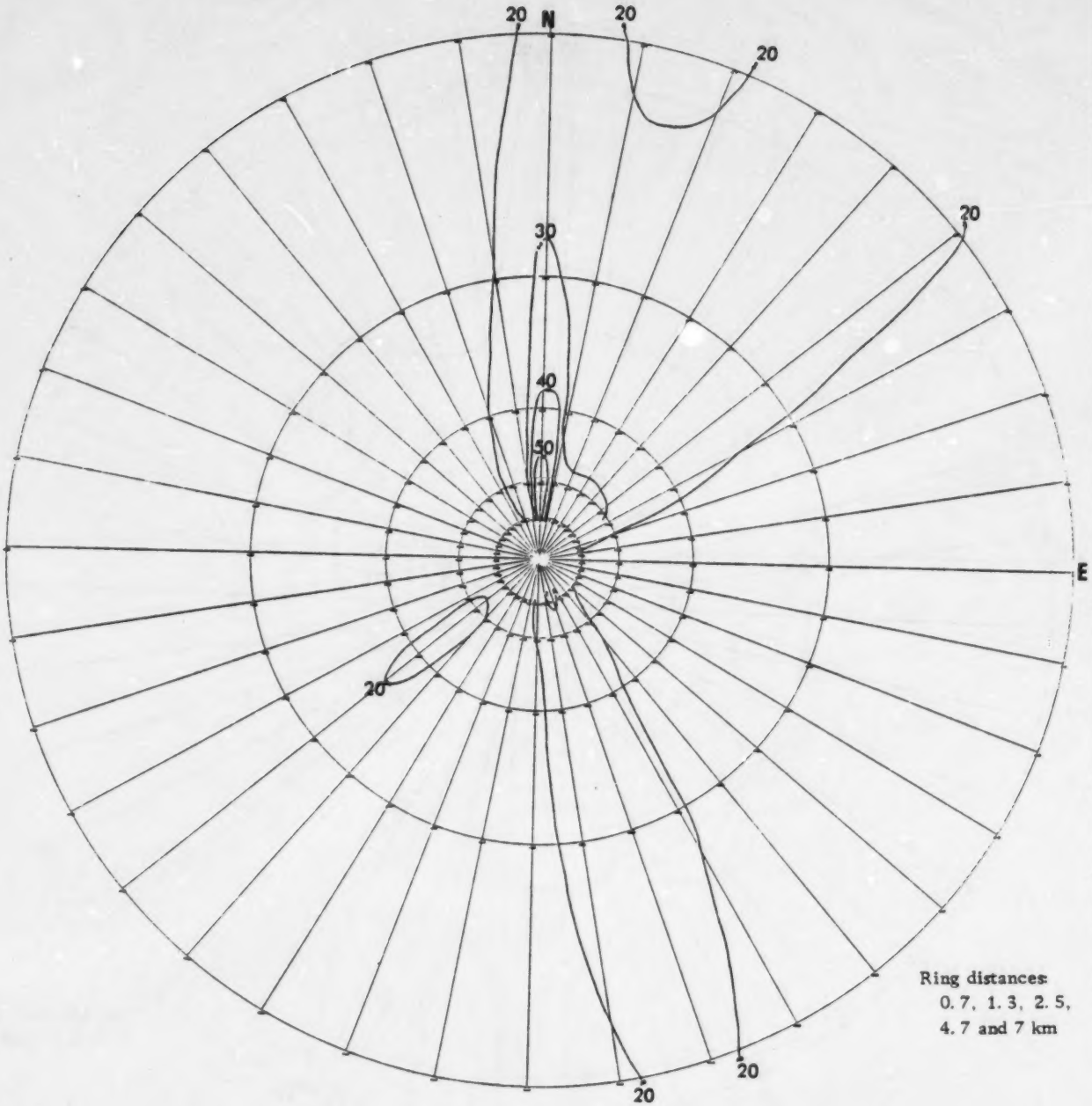


Figure 7. Predicted Annual Average SO_2 Concentrations in Vicinity of the Kingston Plant During SRC Burn ($\mu g/m^3$)

of 67 percent. The simulation shows no violations of the secondary NAAQS for 3-hour SO_2 to occur.

4.3.2 Seward - 3-Hour SO_2 Concentrations

The highest yearly maximum 3-hour SO_2 concentration for the case of the Seward Plant utilizing regular coal, 896 $\mu g/m^3$, is found to impact in a direction northeast of the plant (60°) at a distance of 2.8 km. This does not exceed the secondary NAAQS of 1,300 $\mu g/m^3$ in a three hour time interval for SO_2.

With a switch in fuel type to SRC, the highest yearly maximum 3-hour SO_2 concentration is found to be 272 $\mu g/m^3$, representing a reduction of 70 percent.

4.3.3 Kingston - 3-Hour SO_2 Concentrations

The highest yearly maximum 3-hour SO_2 concentration for the case of the Kingston Plant utilizing regular coal, 8,052 $\mu g/m^3$, is found to impact in a direction north of the plant (360°) at a distance of 0.7 km. This concentration is in gross violation of the secondary NAAQS of 1,300 $\mu g/m^3$ in a 3-hour time interval for SO_2. Of the 180 receptor locations, only 13 concentrations are seen to be under the NAAQS for 3-hour SO_2; these can be found mainly to the west-northwest of the plant at distances greater than 2.5 km.

With a switch in fuel type to SRC, and assuming that the stack exit temperatures and exit velocities under normal load conditions remain the same, the highest yearly maximum 3-hour SO_2 concentration is found to be 2,229 $\mu g/m^3$, representing a reduction of 72 percent. Whereas 167

receptors out of 180 are in violation for the coal burning case, only 16 receptors out of 180 are in violation for the SRC burning case.

If the fuel switch to SRC were to be accompanied by a stack exit velocity 25 percent greater than normal stack exit velocity for coal, the highest yearly maximum 3-hour SO_2 concentration is reduced by 75 percent to a value of 2,007 $\mu g/m^3$. Only 10 receptors out of 180 are in violation of the NAAQS for this specific case.

Table 6 summarizes the maximum values of SO_2 concentrations resulting from both coal and SRC combustion for annual mean, 24-hour and 3-hour time intervals.

Table 6. Maximum Values of SO_2 Concentrations ($\mu g/m^3$) Resulting from Normal Load and Maximum Load Conditions for Regular Coal Combustion and SRC Combustion

Plants	Fuel Type	Normal Load			Maximum Load	
		Annual Mean	24-Hour Maximum	3-Hour Maximum	24-Hour Maximum	3-Hour Maximum
Shawville	Coal (2.2%S)	60.0	680.9	2225.8	642.4	2094.9
Shawville	SRC (0.7%S)	42.4	242.6	740.8	230.5	699.6
Seward	Coal (2.5%S)	63.8	349.5	896.5	415.9	826.2
Seward	SRC (0.7%S)	50.0	126.2	271.9	143.9	253.2
Kingston	Coal (2.3%S)	149.8	1951.4	8051.7	1702.1	8087.4
Kingston*	SRC (0.7%S)	50.5	546.0	2228.9	474.9	2230.3
Kingston**	SRC (0.7%S)	43.9	443.8	2006.6	419.7	1965.9

* Stack exit velocity assumed to be the same as the coal case.
** Stack exit velocity assemed to increase by 25 percent.

4.4 IDENTIFICATION OF MAXIMUM ANNUAL 24-HOUR PARTICULATE CONCENTRATIONS, EXCEEDANCES OF THE NAAQS, AND COMPARISON OF COAL AND SRC BURNS AT EACH POWER PLANT

4.4.1 Shawville - 24-Hour Particulate Concentrations

The highest annual 24-hour particulate concentration for the case of the Shawville plant utilizing regular coal, 200.9 $\mu g/m^3$, is found to impact north of the plant (360°) at a distance of 0.83 km. Of the 20 maximum 24-hour particulate concentrations generated by the Gaussian model, 35 percent are found to lie to the east-southeast (100°-120°), close to the plant; 30 percent are found to lie to the north (300°) of the plant within 1.66 km distance.

Of the 20 maximum 24-hour particulate concentrations, none are found to exceed the Federal primary 24-hour standard of 260 $\mu g/m^3$, with the generated values ranging from a maximum of 200.9 $\mu g/m^3$, to 140.8 $\mu g/m^3$.

With a switch in fuel type to SRC, the 20 maximum 24-hour particulate concentrations range from a maximum of 76.3 $\mu g/m^3$; resulting in reduction on the order of from 46 percent to 62 percent.

4.4.2 Seward - 24-Hour Particulate Concentrations

The highest annual 24-hour particulate concentration for the case of the Seward Plant utilizing regular coal, 92.5 $\mu g/m^3$, is found to impact northwest of the plant (300°) at a distance of 2.75 km. Of the 20 maximum 24-hour particulate concentrations generated by the Gaussian plume model, 55 percent are found to lie to the east of the plant (80°-120°), within 3.05 km distance. Thirty-five percent of the 20 maximum

24-hour concentrations lie to the northwest (290°-320°) at varying distances from 1.17 to 5.23 km.

Of the 20 maximum 24-hour particulate concentrations, none are found to exceed the Federal primary 24-hour standard of 260 $\mu g/m^3$, with the generated values ranging from a maximum of 92.5 $\mu g/m^3$, to 86.8 $\mu g/m^3$.

With a switch in fuel type to SRC, the 20 maximum 24-hour particulate concentrations are all reduced to 75 $\mu g/m^3$, amounting to decreases of 13 percent to 19 percent.

4.4.3 Kingston - 24-Hour Particulate Concentrations

The highest annual 24-hour particulate concentration for the case of the Kingston Plant utilizing regular coal, 494.8 $\mu g/m^3$, is found to impact north of the plant (360°), at a distance of 1.33 km. Of the 20 maximum 24-hour particulate concentrations generated by the Gaussian plume model, 50 percent are found to lie to the north of the plant (360°) within 1.33 km distance, 30 percent of the 20 maximum 24-hour concentrations lie to the southeast (160°), mostly about 0.71 km from the plant.

Of the 20 maximum 24-hour particulate concentrations, all are found to exceed the Federal primary 24-hour standard of 260 $\mu g/m^3$, with the generated values ranging from a maximum of 494.8 $\mu g/m^3$ to 324.4 $\mu g/m^3$.

With a switch in fuel type to SRC, the 20 maximum 24-hour particulate concentrations range from a maximum of 68.4 $\mu g/m^3$ to 67.0 $\mu g/m^3$; resulting in reductions on the order of 79 percent to 86 percent and concentrations in compliance with the NAAQS.

4.5 IDENTIFICATION OF MAXIMUM ANNUAL MEAN PARTICULATE CONCENTRATIONS, EXCEEDANCES OF NAAQS, AND COMPARISON OF COAL AND SRC BURNS AT EACH POWER PLANT

4.5.1 Shawville - Annual Mean Particulate Concentrations

The highest maximum annual mean particulate concentration for the case of the Shawville Plant utilizing regular coal, 80.2 $\mu g/m^3$, is found to impact in a direction east-southeast of the plant (100°) at a distance of 0.8 km. All of the 180 receptor concentrations exceed the NAAQS of 75 $\mu g/m^3$ for one year due to the fact that the area background value utilized is 75 $\mu g/m^3$.

With a switch in fuel type to SRC, the highest maximum annual mean particulate concentration is reduced approximately 6 percent to essentially the background level of 75 $\mu g/m^3$.

4.5.2 Seward - Annual Mean Particulate Concentrations

The highest maximum annual mean particulate concentration for the case of the Seward Plant utilizing regular coal, 76.1 $\mu g/m^3$, is found to impact in a direction east-northeast of the plant (80°) at a distance of 3.7 km. All of the 180 receptor concentrations equal or exceed the NAAQS of 75 $\mu g/m^3$ for one year due to the fact that the area background value is 75 $\mu g/m^3$.

With a switch in fuel type to SRC, the highest maximum annual mean particulate concentration is reduced approximately 1 percent to essentially the background level of 75 $\mu g/m^3$.

4.5.3 Kingston - Annual Mean Particulate Concentrations

The highest maximum annual mean particulate concentration for the case of the Kingston Plant utilizing regular coal, 95.5 $\mu g/m^3$, is found to impact in a direction north of the plant (360°) at a distance of 0.7 km. Of the 180 receptor concentrations, 28 of them, or 16 percent, exceed the NAAQS of 75 $\mu g/m^3$ for one year.

With a switch in fuel type to SRC, the highest maximum annual mean particulate concentration is reduced approximately 32 percent to a value of 65.2 $\mu g/m^3$, essentially that of the background level of 65 $\mu g/m^3$.

4.6 IDENTIFICATION OF MAXIMUM ANNUAL 3-HOUR PARTICULATE CONCENTRATIONS, EXCEEDANCES OF NAAQS, AND COMPARISON OF COAL AND SRC BURNS AT EACH POWER PLANT

4.6.1 Shawville

The highest yearly maximum 3-hour particulate concentration for the case of the Shawville plant, utilizing regular coal, 501.3 $\mu g/m^3$, is found to impact in a direction north (360°) of the plant at a distance of 0.8 km.

With a switch in fuel type to SRC, the highest yearly maximum 3-hour particulate concentration is found to be 79.5 $\mu g/m^3$, representing a reduction of 84 percent.

4.6.2 Seward - 3-Hour Particulate Concentrations

The highest yearly maximum 3-hour particulate concentration for the case of the Seward Plant, utilizing regular coal, 124.3 $\mu g/m^3$ is found to impact in a direction northeast of the plant (60°) at a distance of 2.8 km.

With a switch in fuel to SRC, the highest yearly maximum 3-hour particulate concentration is found to be 75.8 $\mu g/m^3$, representing a reduction of 39 percent.

4.6.3 Kingston - 3-Hour Particulate Concentrations

The highest yearly maximum 3-hour particulate concentration for the case of the Kingston Plant utilizing regular coal, 1,836 $\mu g/m^3$, is found to impact in a direction north of the plant (360°) at a distance of 0.7 km.

With a switch in fuel type to SRC, the highest yearly maximum 3-hour particulate concentration is found to be 78.9 $\mu g/m^3$, representing a 96 percent reduction.

Table 7 provides a capsule summary of the Frequency of Exceedances of the 24-hour NAAQS for particulate for coal and SRC under normal and maximum load conditions. Table 8 summarizes the maximum values of particulate concentration under all alternatives and the time intervals of interest.

Table 7. Frequency of Exceeding 24-Hour Standard for Particulates Based on 1975 Operating Levels for Regular Coal and for SRC Combustion

Plant	Fuel*	Estimated Number of Exceedances Per Year of Federal 24-hr Standard (i.e., 260 µg/ms)	
		Normal Load	Maximum Load
Shawville	Coal	0	0
Shawville	SRC	0	0
Seward	Coal	0	0
Seward	SRC	0	0
Kingston	Coal	>20	> 20
Kingston	SRC	0	0

* Ash content of fuels are 13.5% for Shawville coal, 15.6% for Seward coal, 16.4% for Kingston coal and 0.19% for SRC.

Table 8. Maximum Value of Particulate Concentrations ($\mu g/m^3$) Resulting from Normal Load and Maximum Load Conditions for Regular Coal Combustion and SRC Combustion

Plants	Fuel*	Normal Load			Maximum Load	
		Annual Mean	24-Hour Maximum	3-Hour Maximum	24-Hour Maximum	3-Hour Maximum
Shawville	Coal	80.2	200.9	501.3	194.5	479.9
Shawville	SRC	75.1	76.3	79.5	76.3	79.3
Seward	Coal	76.1	92.5	124.3	96.0	119.4
Seward	SRC	75.0	75.3	75.8	75.3	75.7
Kingston	Coal	95.5	494.8	1,836.1	445.0	1,863.3
Kingston	SRC	65.2	68.4	78.9	66.6	72.0

* Ash contents of fuel are 13.5% for Shawville coal, 15.6% for Seward coal, 16.4% for Kingston coal and 0.19% for SRC.

4.7 EXAMINATION OF NO_x CONCENTRATIONS

Of the three pollutants examined, the switch to SRC from coal has a very small impact on the predicted levels of NO_x for each of the power plants. Table 9 summarizes the maximum values of NO_x resulting from normal and maximum load conditions for both coal and SRC for annual mean, 24-hour and 3-hour time intervals of interest. This, coupled with the aforementioned uncertainties associated with NO_x photochemistry and scaling techniques, results in a limited analysis of the calculated concentrations of NO_x for the three power plants.

Table 9. Maximum Values of NO_x Concentrations ($\mu g/m^3$) Resulting from Normal Load and Maximum Load Conditions for Regular Coal Combustion and SRC Combustion

Plants	Fuel	Normal Load			Maximum Load	
		Annual Mean	24-Hour Maximum	3-Hour Maximum	24-Hour Maximum	3-Hour Maximum
Shawville	Coal	57.8	196.5	541.6	187.9	512.2
Shawville	SRC	57.5	189.3	517.3	181.3	490.0
Seward	Coal	55.5	108.7	210.6	120.8	196.9
Seward	SRC	55.0	99.9	185.9	106.0	164.9
Kingston	Coal	68.9	450.0	1744.5	395.3	1745.3
Kingston	SRC	68.3	441.7	1710.0	209.1	802.0

Section 5.0

CONCLUSIONS

The most significant impact on air quality of switching from coal to SRC at each of the three power plants investigated in this study is the reduction in SO_2 and particulate concentrations. At the Shawville Plant, all of the highest 20 maximum 24-hour SO_2 concentrations are found to violate the NAAQS with coal as the fuel; the switch to SRC results in each of these 20 violations being brought below the NAAQS standards. The net reduction of SO_2 24-hour concentrations is on the order of 60 to 65 percent as a result of the fuel switch. At the Seward Plant, a similar reduction of SO_2 24-hour concentrations (60 to 65 percent) results from the coal to SRC changeover, although no violations of the NAAQS existed to start with. The Kingston Plant shows the greatest reduction of SO_2 24-hour concentrations as a result of the switch to SRC (72 percent); with an accompanying reduction in the frequency of exceeding the 24-hour standard for SO_2.

At the Shawville Plant, a switch to SRC results in reductions of particulate concentrations on the order of 46 to 62 percent for the 20 maximum 24-hour particulate concentrations. At the Seward Plant, a switch to SRC results in reductions of particulate concentrations on the order of 13 to 19 percent for the 20 maximum 24-hour particulate concentrations. At the Kingston Plant, a switch to SRC results in reductions of particulate concentrations on the order of 79 to 86 percent for the 20 maximum 24-hour particulate concentrations. Each of the 20 maximum concentrations was in violation of the NAAQS for the coal case, but all concentrations are below the NAAQS for the SRC case at the Kingston Plant.

At all three plants the highest maximum annual mean particulate concentrations are reduced to essentially the background level values of particulates in the SRC case.

The magnitude of the air quality levels estimated in this study compared to national air quality standards is dependent on the modeling assumptions used. We have employed assumptions which in our judgment represent the most realistic estimates. The specific assumptions used are described in Appendix A. However, the relative reduction in air quality levels due to the use of SRC compared to conventional coal is dependent on the emission estimates for the two types fuels and is nearly independent of the model assumptions used. It is evident from the results presented in this study that large reductions in the ambient level of SO_2 and TSP will occur when SRC is substituted for conventional coal.

Air quality is only one consideration which must be evaluated in deciding whether it is desirable to use SRC as a fuel. The costs of obtaining and burning SRC are beyond the scope of this study but an important consideration. Other methods of reducing SO_2 and particulate emissions are also possible. The use of scrubbers, bag house filters and coal cleaning processes are among the emission reductions which are available for consideration.

APPENDIX A

AIR QUALITY MODEL

The SO_2, NO_x and TSP air quality levels computed for this study were made using a modified version of the presently standard technique for estimating air quality levels. The technique, including the modifications, is based on a computer model of the Gaussian plume equation as described in the EPA Workbook of Atmospheric Dispersion Estimates (Turner 1970).

The Gaussian plume describing the concentration at a single point from a stack, as used in this study is:

$$\chi = \frac{Q \exp\left\{-\frac{1}{2}\left(\frac{y}{\sigma_y}\right)^2\right\}}{\sqrt{2\pi}\, u\, \sigma_y\, L} \qquad \left(\sigma_z \geq 1.6\, L\right)$$

$$\chi = \frac{Q \exp\left\{-\frac{1}{2}\left(\frac{y}{\sigma_y}\right)^2\right\}}{\pi\, u\, \sigma_y \sigma_z} \sum_{N=-45}^{45} \exp\left\{-\frac{1}{2}\left(\frac{H-2NL}{\sigma_z}\right)^2\right\} \left(\sigma_z < 1.6\, L\right) \qquad (1)$$

$$\chi = 0 \qquad (H > L, \text{ all } \sigma_z)$$

where

χ = concentration, g/m^3

Q = emission rate, g/sec

u = wind speed, m/sec

σ_y, σ_z = dispersion coefficients, m

y = crosswind distance from plume centerline, m

H = height of plume centerline above ground, m

L = height of mixing layer, m.

The above equations vary slightly from the EPA Workbook, but they are in the form presently recommended by EPA as reflected in the UNAMAP* system program PTMTP and the Single Source 24-Hour Model (CRSTER) program. The variations introduced to this model for this study are contained in the way the values of σ_y, σ_z and H are determined for use in the above equations. The following guidelines were used to determine these parameters:

- To represent the initial expansion of the turbulent hot exhaust gases from the stack, the initial volume is represented by a virtual point, i.e., appearing to originate from a point upwind of the stack such that:

$$\sigma_z(X_0) = 3D \qquad (2)$$

where $\sigma_z(X_0)$ = vertical dispersion coefficient for a plume originating from a point a distance X_0 upwind.

D = stack diameter.

This correction has little effect on ground concentrations more than 1 or 2 km from the plant.

- Under neutral and unstable conditions the height of the plume above ground level (H) is not affected by terrain irregularities and is a function of distance from the stack as proposed by Briggs and reflected in the UNAMAP computer program subroutine BEH072.

- Under stable conditions, the height of the plume above the terrain (H) is reduced from that predicted by the BEH072 subroutine to 60 percent of the amount that the ground elevation at the point of interest exceeds ground

* UNAMAP is an acronym for a set of computer programs designed by EPA to compute air quality levels. It is available on magnetic tape from the National Technical Information Service, Springfield, Virginia.

elevation at the base of the stack. However, the plume height is limited to being no less than 40 percent of uncorrected plume height. This results in keeping the plume higher above terrain than the full terrain adjustment factor which is frequently applied. It results in reasonable estimates.

- The horizontal and vertical dispersion coefficients, σ_y and σ_z, are computed using a modified DBTSIG subroutine from the UNAMAP system of programs with the following modifications:

  - The downwind distance is taken to be the distance from a point of interest to the plant plus the virtual distance (X_o) defined by equation (2)

  - The power law expressions describing the variation of σ_y and σ_z with distance from the source are those derived by Singer and Smith (1966) to fit atmospheric diffusion experiment data gathered over a period of 15 years at the Brookhaven National Laboratory. This represents a change from the Pasquill-Turner stability selection algorithm and the dispersion calculation technique originally used in subroutine DBTSIG of the Single Source Model. The justification for the selection of the Brookhaven σ_y and σ_z curves was based on several considerations. Complex terrain, characteristic of the three plants, imposes modifications on the dispersion coefficients, including those associated with plume distortion, as well as enhanced dilution from various sources of irregular motions including wake effects and gravity flows. The three power plants in question qualify as elevated point sources. The Pasquill-Gifford σ_z curves (Gifford 1961) are based mostly on ground-level concentration measurements made up to 800 m downwind of a ground-level source over smooth, flat terrain. Application of this set of curves is questionable in the case of the plume from an elevated source. The Brookhaven curves are based on average concentration measurements from an elevated passive source, surrounded by a rougher surface. The recent AMS workshop on stability classification schemes and sigma curves (Hanna et al. 1977) suggest that for elevated sources, the Brookhaven curves are an appropriate choice when σ_z is less than the effective source height. This criterion is found to be true out to a distance of 10 kilometers for the three power plants in question for all stabilities.

    For the estimation of σ_y, the workbook recommends using the standard deviation of the horizontal wind angle, σ_θ, as a function of downstream distance from the source. Unfortunately, little data is available for this parameter for the plant sites in question, and as a result the Brookhaven stability curves for σ_y were utilized instead.

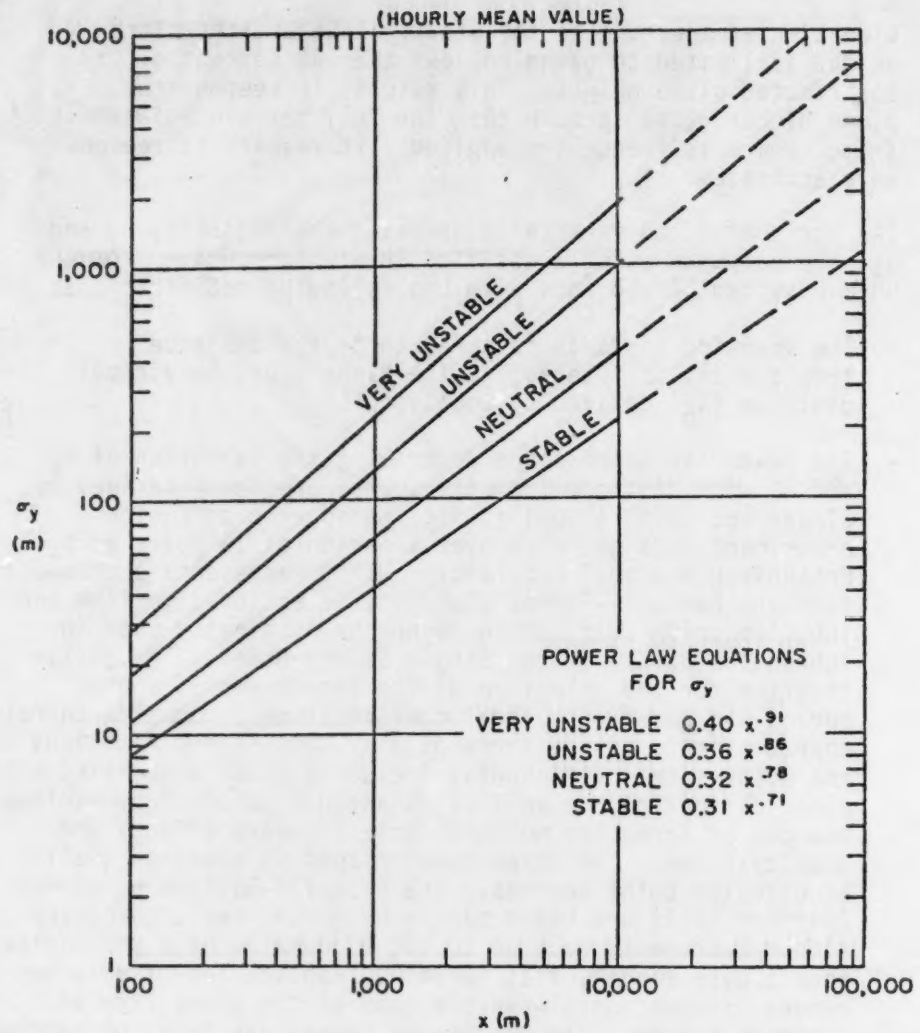


Figure 1. Horizontal Standard Deviations of a Plume. In the dispersion equations, the crosswind plume standard deviations are functions of distance (x) and meteorological conditions. Four such plots are given in this figure. The dashed lines indicate that the relations are tentative and unreliable beyond 10,000 m.

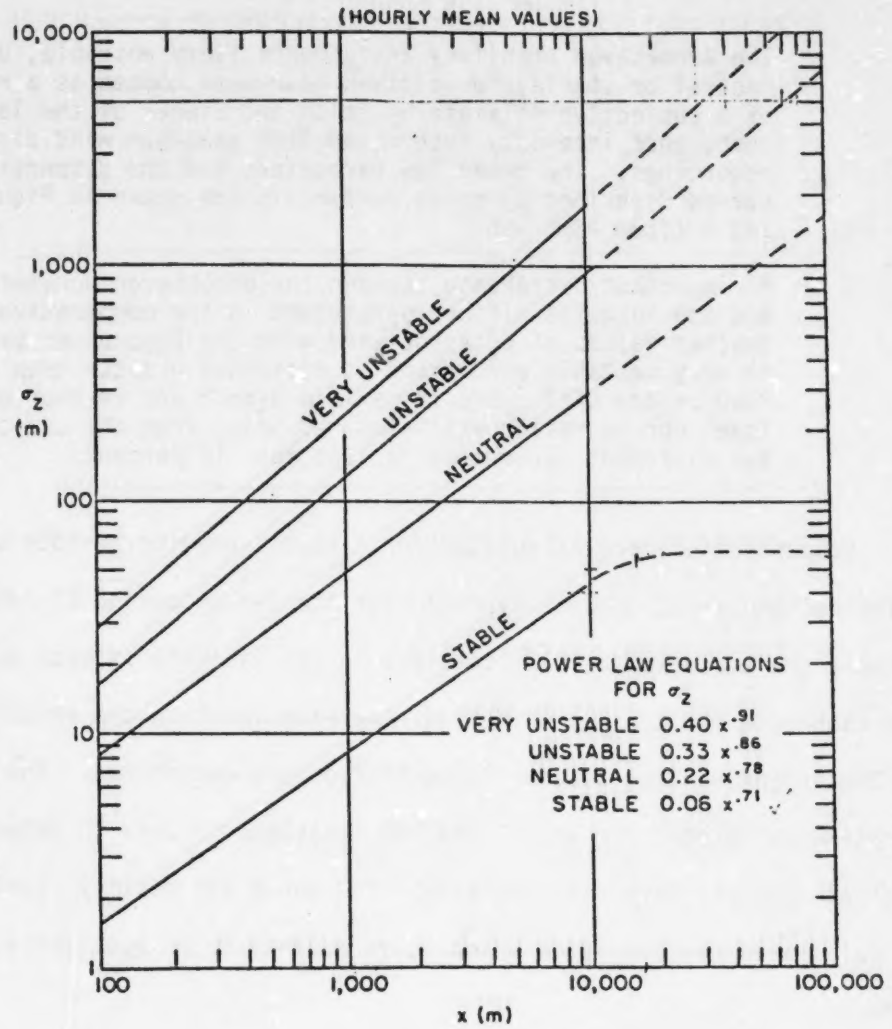


Figure 2. Vertical Standard Deviations of a Plume. The vertical standard deviations are corresponding to those in Figure 1 are shown. The stable plot approaches a constant beyond 10,000 m because it is believed that vertical dispersion almost ceases in such conditions.

The Brookhaven stability assignments (very unstable, unstable, neutral or stable) for a given hour were chosen as a result of a subjective estimate by Smith and Singer of the lateral turbulence intensity determined from analogue wind direction recordings. The power law parameters and the dispersion curves described by these parameters are shown in Figure 1 and 2 (from ASME 1968).

An important difference between the Brookhaven parameters and the Pasquill-Gifford parameters is the comparatively smaller values of σ_z associated with the Brookhaven parameters in very unstable conditions at distances greater than 1 km. However the difference in maximum 3-hour and 24-hour ground level concentration estimates resulting from the use of the two different parameters is less than 10 percent.

Concentrations are calculated for 1-hour averaging periods using meteorological and emission data averaged for the 1-hour period of interest. Calculations are evaluated at 180 locations in the vicinity of each plant site for each hour for a 12-month period. At each location the annual mean, maximum 3-hour and maximum 24-hour concentration are determined. The highest concentration calculated for any of the 180 locations is used in determining the worst air quality level at each site. The worst air quality level is the highest calculated concentration which is determined to be applicable at each site.

The 180 locations consist of a polar gridwork of points surrounding the plant. There is a point at 5 distances in each of 36 directions from the plant. The five rings of distances are selected by considering the distance to the expected maximum ground concentration associated with neutral conditions and the stability which produced the maximum value over flat terrain as follows:

$$X_1 = X_2 - \Delta$$

$$X_2 = \min (X_M, X_D)$$

$$X_3 = \frac{X_M + X_D}{2}$$

$$X_4 = \max (X_M, X_D)$$

$$X_5 = X_4 + \Delta$$

X_M = distance to maximum ground concentration over flat terrain excluding neutral stability (PTMAX program from UNAMAP)

X_D = distance to maximum ground concentration over flat terrain under neutral conditions (PTMAX)

$$\Delta = \left| \frac{X_D - X_M}{2} \right|$$

The tentatively selected ring distances are laid out on a topographic map. The ring distances are then adjusted slightly to overlay prominent terrain elevations in the vicinity. The elevation of the plant site and the 180 locations are coded from the topographical maps to be used in evaluating the height of the plume above ground level.

Other data which must be input to the model include the following:

- SO_2, NO_x, TSP emission rates, g/sec
- Wind speed, m/sec
- Wind direction, azimuth degrees
- Atmospheric stability (Brookhaven Class 1 to 4)
- Mixing height, m
- Ambient temperature, °K
- Stack height, m
- Stack diameter, m
- Stack exit gas temperature, °K
- Stack exit gas velocity, m/sec.

The wind speed is input for each hour at a measured anemometer height. This is adjusted to an estimated wind speed at the plume height using a power law relationship selected for the atmospheric stability. The following relationship is used:

$$u = \left(\frac{H}{h_a}\right)^p u_a$$

where

u = wind speed at plume height, m/sec

H = height of plume above plant site, m

h_a = anemometer height, m

u_a = measured wind speed, m/sec

p = exponent given by atmospheric stability (see Table 1).

Table 1. Wind Speed Exponents Related to Atmospheric Stability.

Wind Speed Exponent	Atmospheric Stability (Brookhaven Class)
0.11	Very unstable
0.11	Unstable
0.16	Neutral
0.41	Stable

The wind speed exponents were derived from data utilized in a study by Touma (1977) in which the dependence of the wind profile power law on stability for various locations was investigated (Table 2).

Table 2. Power Law Exponents for Various Sites Computed from Annual Average Wind Speeds at Two Levels.

Stability class	Missouri[a] 1973–74	Missouri[a] 1974–75	Kansas[a] 1973–74	Kansas[a] 1974–75	Iowa[a] 1973–74	Texas[a] 1973–74	Michigan[a] 1975–76	Missouri[b] 1973–74
A	0.103	0.090	0.124	0.091	0.104	0.120	0.109	0.111
B	0.079	0.092	0.145	0.103	0.101	0.123	0.085	0.119
C	0.082	0.080	0.152	0.122	0.114	0.128	0.078	0.104
D	0.115	0.144[c]	0.199	0.172	0.188	0.174	0.116	0.136
E	0.271	0.273	0.341	0.282	0.313	0.330	0.261	0.272
F	0.423	0.385	0.480	0.412	0.466	0.562	0.425	0.424
G	0.504	0.417	0.506	0.452	0.444	0.624	0.516	0.447
Terrain	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling	Hilly	Rolling

[a] Stability class based on a ΔT of 10 to 60 m.
[b] Stability class based on a ΔT of 10 to 90 m.
[c] For 1/7 power law p = 0.143.

The Pasquill-Gifford stability classes were regrouped into the four Brookhaven categories. For each stability, the mean power law exponent was calculated, based on the power law exponents given for each location, so that the resulting exponents were reflective of typical conditions in rolling terrain.

The modifications to the air quality model which have been introduced for this study were selected by defining the following three parameters which were empirically adjusted to get a reasonable fit between the model calculations and measured values in a recent study to analyze SO_2 concentrations in the vicinity of non-urban point sources in Pennsylvania (Koch 1977):

$$\sigma_z (X_o) = F_1 D \tag{4}$$

$$\sigma_y'(X+X_o) = F_2 \sigma_y(X+X_o) \tag{5}$$

$$H = h+\Delta H - F_3 \min\left[\left\{(h+\Delta H), (z+z_p)\right\}\right] \tag{6}$$

where

F_1, F_2, F_3 = empirical parameters

$\sigma_z(X_o)$ = source volume parameter (see equation 2)

D = stack diameter

h = stack height

ΔH = plume rise due to buoyancy and momentum

z = elevation of receptor

zp = elevation of plant

$\min \{A,B\}$ = minimum of values A and B.

The empirical parameters F_1, F_2 and F_3 are inserted in the above equations to represent physical characteristics of the plume which may be adjusted to represent the influence of a specific source and site on the model. The parameter F_2 is used to define the effective initial volume which a plume has immediately over a stack as a multiple of the stack diameter. The parameter F_2 is used to define the plume horizontal width (averaged over an hour) as a multiple of a standard set of plume widths (e.g., the Brookhaven values for σ_y). This factor permits the influence of local terrain features in enhancing the meander of the wind to be included. The third empirical parameter, F_3, permits the influence of major terrain features on the height of the plume above ground level to be adjusted for local conditions. If $F_1 = F_3 = 0$ and $F_2 = 1$, there is no change from the standard equations. A value of 3 for F_1 was selected as

a reasonable estimate to compensate for the general observation from field tests that plume dimensions near the source greatly exceed estimates based on standard Gaussian plume parameters. F_2 was left at a value of 1. A value of 0.6 was assigned to F_3 based on the recommendations of a recent study by Slowik and Pica (1976).

The two most significant features of the modeling approach are the treatment of terrain and the use of the Brookhaven dispersion parameters with stability characterized by vertical temperature gradient. The effect of the method of stability classification is very small since both the vertical temperature and the Pasquill stability class based on cloud cover and wind speed considerations produce about the same frequency distribution of stability classes. The use of the Brookhaven parameters instead of the Pasquill-Gifford parameters has been found by subsequent calculations to change the maximum 3-hour and 24-hour ground concentration estimates by less than 10 percent. The terrain height adjustment factor has the largest effect where terrain at or above the plume height is encountered. In the vicinity of the Seward Plant, the maximum 3-hour and 24-hour concentration estimates on the ridges to the east of this plant are greatly reduced by the use of 60 percent rather than a 100 percent terrain adjustment factor. Although the use of the 60 percent factor has been well validated at this site (Slowik 1977), the modeling approach used in this report provides much lower estimates than would be provided by other widely used approaches such as a 100 percent adjustment factor.

Appendix B

The computer printouts are arranged in a specific sequence, in three subsections, according to pollutant. The first section is SO_2, the second is NO_x and the third is TSP. The following is the sequence of information presented for a given pollutant at a given power plant:

Normal Conditions

- Power Plant Name
- 180 Plant Receptor Elevations
- Coal - Pollutant
- Plant Parameters, Ring Distances
- Annual Mean Concentration of Pollutant at Each Receptor
- Highest 24-Hour Concentration at Each Receptor
- Highest 3-Hour Concentration at Each Receptor
- 20 Maximum Daily Concentrations (24-Hour)

Maximum Conditions

- Plant Parameters - Maximum Conditions
- Meteorological Parameters for Each of 20 Maximum Days
- Annual Mean Concentration of Pollutant at Each Receptor
- Highest 24-Hour Concentration at Each Receptor
- Highest 3-Hour Concentration at Each Receptor
- 20 Maximum Daily Concentrations (24-Hour)

Next Printout

SRC Case with the same sequence of information (i.e., normal and maximum conditions) for the same plant.

Next Power Plant Printout

Unless specified otherwise on the printout the following units are used for the reported numbers:

Parameter	Units
Concentration	g/m^3
Speed	m/sec
Temperature	°K
Height	m

The following abbreviations are used on the listings of meteorological parameters:

Abbreviation	Parameter
JYR	Year
IMO	Month
JDAY	Day of Year
ISTAB	Pasquill Stability Class (1 to 6)
AWS	Wind Speed
TEMP	Ambient Temperature
AFV and AFVR	Wind Path (direction wind is moving to)
HLHI	Mixing Height

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PENN. ELECTRIC CO. SHANVILLE
SOLVENT REFINED COAL STUDY    PROJECT 7101

SHANVILLE PLANT 1975

&NAM1
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IOHGT=  2    HHGI=  91.0   HST=  1
NPOL=  2    JTAH=  1    IOPUP=  2
NSEA=  1    ECONV=    0.3048006    SYTF=  1.0    FIX=  3.0    TAF=  0.50    PACKGR=      31.0

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       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
```

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1080.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1350.0	1300.0	1400.0	1880.0	2160.0
2	1200.0	1200.0	1600.0	2174.0	2100.0
3	1160.0	1460.0	1590.0	1760.0	2000.0
4	1120.0	1400.0	1540.0	1600.0	1900.0
5	1200.0	1360.0	1520.0	1600.0	1800.0
6	1250.0	1330.0	1350.0	1567.0	1560.0
7	1220.0	1420.0	1260.0	1560.0	1500.0
8	1180.0	1300.0	1540.0	1500.0	1481.0
9	1100.0	1300.0	1340.0	1627.0	1549.0
10	1070.0	1320.0	1584.0	1639.0	1564.0
11	1050.0	1320.0	1580.0	1766.0	1668.0
12	1160.0	1060.0	1340.0	1836.0	1744.0
13	1320.0	1150.0	1300.0	1720.0	1700.0
14	1400.0	1420.0	1420.0	1743.0	1800.0
15	1420.0	1520.0	1605.0	1700.0	1900.0
16	1440.0	1590.0	1580.0	1900.0	2100.0
17	1440.0	1300.0	1580.0	1900.0	2100.0
18	1440.0	1260.0	1260.0	1780.0	1840.0
19	1420.0	1200.0	1320.0	1700.0	1620.0
20	1400.0	1100.0	1400.0	1625.0	1540.0
21	1200.0	1080.0	1480.0	1540.0	1520.0
22	1060.0	1300.0	1572.0	1440.0	1620.0
23	1050.0	1460.0	1540.0	1120.0	1537.0
24	1200.0	1500.0	1540.0	1551.0	1796.0
25	1200.0	1400.0	1540.0	1505.0	1773.0
26	1260.0	1440.0	1520.0	1660.0	2120.0
27	1380.0	1460.0	1560.0	1880.0	2320.0
28	1440.0	1400.0	1540.0	1760.0	2251.0
29	1460.0	1440.0	1560.0	2140.0	2224.0
30	1460.0	1480.0	1580.0	2040.0	2253.0
31	1480.0	1500.0	1560.0	2100.0	2293.0
32	1500.0	1540.0	1460.0	2000.0	2220.0
33	1500.0	1520.0	1400.0	1841.0	2240.0
34	1480.0	1400.0	1746.0	2218.0	2056.0
35	1460.0	1200.0	1640.0	1960.0	2220.0
36	1440.0	1463.0	1380.0	1900.0	2405.0

STACK # 1--SHAWVILLE STACK 1
STACK # 2--SHAWVILLE STACK 3 AND 4

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOR	815.41	0.00	182.88	3.81	21.82	391.00	248.77
2	NOR	1219.47	0.00	99.06	3.73	18.84	346.00	205.87

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.26 1.09 0.98 0.87 1.10 0.92 0.87 1.08 0.98 0.80 1.05 1.00

YEAR HAS 1) 11 365. DAYS

PENN. ELECTRIC CO. SHANVILLE

NO4--SO2

MAXIMUM MEAN CONC= 6.00235E-05 DIRECTION= 10 DISTANCE= 0.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	5.06961E-05	5.34633E-05	4.68446E-05	4.11714E-05	3.61744E-05
2	5.36420E-05	5.53117E-05	4.86683E-05	4.24092E-05	3.73744E-05
3	5.49300E-05	5.74952E-05	5.26152E-05	4.83907E-05	4.37625E-05
4	5.43219E-05	5.56057E-05	5.20722E-05	4.85887E-05	4.35791E-05
5	5.02796E-05	5.21404E-05	5.04910E-05	4.79075E-05	4.29829E-05
6	4.96265E-05	5.10831E-05	5.09917E-05	4.87414E-05	4.33418E-05
7	5.17587E-05	5.33901E-05	5.46644E-05	5.25769E-05	4.53797E-05
8	5.52912E-05	5.72749E-05	5.72823E-05	5.38112E-05	4.62229E-05
9	5.85251E-05	5.93535E-05	5.68240E-05	5.24102E-05	4.53495E-05
10	6.00232E-05	5.84607E-05	5.39835E-05	4.94034E-05	4.36908E-05
11	5.80473E-05	5.43687E-05	4.89183E-05	4.49406E-05	4.05491E-05
12	5.30081E-05	4.99722E-05	4.61715E-05	4.33002E-05	3.98108E-05
13	4.76829E-05	4.62008E-05	4.30479E-05	4.10306E-05	3.87530E-05
14	4.37151E-05	4.33774E-05	4.09426E-05	3.92187E-05	3.73979E-05
15	4.10867E-05	4.13259E-05	3.95262E-05	3.85313E-05	3.69005E-05
16	3.91370E-05	3.92199E-05	3.76008E-05	3.65246E-05	3.56209E-05
17	3.79329E-05	3.80891E-05	3.71435E-05	3.67849E-05	3.59803E-05
18	3.70321E-05	3.72620E-05	3.64882E-05	3.60402E-05	3.53910E-05
19	3.63666E-05	3.65131E-05	3.63158E-05	3.61092E-05	3.54684E-05
20	3.61314E-05	3.62443E-05	3.56191E-05	3.51826E-05	3.48668E-05
21	3.59973E-05	3.61457E-05	3.55338E-05	3.51732E-05	3.47488E-05
22	3.59884E-05	3.63278E-05	3.59003E-05	3.56626E-05	3.52796E-05
23	3.64674E-05	3.73199E-05	3.67316E-05	3.65355E-05	3.62736E-05
24	3.73624E-05	3.89869E-05	3.85379E-05	3.89953E-05	3.83100E-05
25	3.81124E-05	4.02666E-05	4.08256E-05	4.21124E-05	4.07946E-05
26	3.83941E-05	4.02550E-05	3.97336E-05	3.99029E-05	3.90583E-05
27	3.85648E-05	3.97825E-05	3.90199E-05	3.95000E-05	3.88122E-05
28	3.98396E-05	4.09215E-05	4.02321E-05	4.02121E-05	3.95026E-05
29	4.29070E-05	4.38109E-05	4.33520E-05	4.36404E-05	4.10223E-05
30	4.58265E-05	4.58607E-05	4.37178E-05	4.23033E-05	3.94144E-05
31	4.59089E-05	4.53595E-05	4.27090E-05	4.04177E-05	3.81182E-05
32	4.37137E-05	4.33101E-05	4.04848E-05	3.85574E-05	3.71303E-05
33	4.12752E-05	4.13548E-05	3.92975E-05	3.76971E-05	3.64029E-05
34	4.01075E-05	4.04543E-05	3.87210E-05	3.76024E-05	3.67739E-05
35	4.01608E-05	4.04210E-05	3.85240E-05	3.70227E-05	3.61550E-05
36	5.59451E-05	5.81601E-05	4.81382E-05	4.09445E-05	3.77560E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 6.8085E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	2.6664E-04 (150)	2.7041E-04 (173)	1.8281E-04 (173)	1.3628E-04 (165)	1.1865E-04 (283)
2	3.2831E-04 (140)	2.7016E-04 (140)	1.7587E-04 (259)	1.2345E-04 (265)	1.1451E-04 (7)
3	4.0572E-04 (237)	3.0375E-04 (237)	2.1860E-04 (306)	3.0760E-04 (306)	2.2337E-04 (306)
4	3.7232E-04 (151)	2.8104E-04 (151)	2.5304E-04 (56)	2.6031E-04 (56)	1.8793E-04 (23)
5	3.7080E-04 (131)	2.4915E-04 (131)	2.1659E-04 (11)	1.9863E-04 (330)	1.5031E-04 (242)
6	2.9674E-04 (221)	2.5235E-04 (221)	2.8600E-04 (19)	2.8642E-04 (19)	1.6566E-04 (19)
7	3.3929E-04 (221)	2.6732E-04 (221)	3.2523E-04 (14)	3.4596E-04 (14)	2.4462E-04 (4)
8	2.9098E-04 (256)	2.5568E-04 (90)	3.6332E-04 (44)	3.4230E-04 (44)	2.1733E-04 (45)
9	3.3580E-04 (230)	2.7126E-04 (256)	3.1233E-04 (30)	3.6337E-04 (30)	2.5227E-04 (30)
10	4.8518E-04 (230)	3.2671E-04 (230)	4.8827E-04 (94)	3.7709E-04 (94)	2.8028E-04 (318)
11	4.4162E-04 (230)	2.9402E-04 (230)	3.0299E-04 (79)	3.2414E-04 (79)	1.9357E-04 (79)
12	4.0183E-04 (239)	2.4886E-04 (67)	2.9826E-04 (67)	2.4915E-04 (67)	1.4159E-04 (96)
13	3.2984E-04 (122)	2.3740E-04 (136)	1.9705E-04 (2)	1.8085E-04 (2)	1.5233E-04 (303)
14	4.1138E-04 (122)	2.5922E-04 (136)	1.8732E-04 (122)	1.5173E-04 (302)	1.3698E-04 (302)
15	3.6822E-04 (122)	2.3597E-04 (220)	2.3535E-04 (86)	2.2268E-04 (86)	1.4752E-04 (86)
16	2.8633E-04 (219)	2.3258E-04 (219)	1.3366E-04 (219)	1.3951E-04 (34)	1.0942E-04 (34)
17	3.3040E-04 (219)	2.5817E-04 (219)	1.3918E-04 (219)	1.1295E-04 (33)	1.0750E-04 (31)
18	3.0388E-04 (127)	2.8193E-04 (127)	1.6074E-04 (127)	1.9127E-04 (20)	1.3148E-04 (20)
19	3.5062E-04 (127)	2.7160E-04 (127)	1.5904E-04 (127)	1.7714E-04 (20)	1.5013E-04 (218)
20	3.5515E-04 (127)	2.4253E-04 (127)	1.5425E-04 (218)	1.3693E-04 (218)	9.8715E-05 (218)
21	2.7923E-04 (127)	2.0198E-04 (180)	1.4485E-04 (218)	9.5548E-05 (180)	7.3534E-05 (180)
22	2.8404E-04 (180)	2.2021E-04 (180)	1.6709E-04 (218)	1.6984E-04 (218)	1.1266E-04 (218)
23	2.2598E-04 (180)	1.8824E-04 (291)	1.7356E-04 (291)	2.0021E-04 (291)	1.8521E-04 (291)
24	2.4043E-04 (176)	2.7631E-04 (176)	2.1851E-04 (291)	1.9512E-04 (33)	1.8103E-04 (33)
25	2.0236E-04 (176)	2.3903E-04 (176)	3.0699E-04 (73)	3.8489E-04 (73)	2.5082E-04 (73)
26	2.2771E-04 (145)	2.4523E-04 (145)	1.5199E-04 (145)	1.8162E-04 (28)	2.1365E-04 (28)
27	1.8227E-04 (145)	2.3181E-04 (178)	1.7008E-04 (178)	1.9073E-04 (121)	2.0523E-04 (121)
28	2.1987E-04 (120)	1.9369E-04 (178)	1.4078E-04 (244)	2.3198E-04 (121)	2.0187E-04 (121)
29	3.4195E-04 (120)	2.5126E-04 (120)	2.3741E-04 (243)	2.8929E-04 (243)	2.1792E-04 (243)
30	3.5024E-04 (120)	2.6861E-04 (120)	1.9022E-04 (120)	2.1203E-04 (8)	1.4958E-04 (162)
31	4.3149E-04 (137)	2.9301E-04 (137)	2.7385E-04 (123)	3.1657E-04 (123)	2.0131E-04 (123)
32	3.4147E-04 (137)	2.1696E-04 (137)	1.3645E-04 (272)	1.5503E-04 (6)	1.2441E-04 (6)
33	2.5173E-04 (258)	2.0193E-04 (250)	1.2352E-04 (258)	1.0931E-04 (71)	1.0369E-04 (71)
34	2.7192E-04 (258)	1.8794E-04 (258)	1.1366E-04 (211)	1.1992E-04 (53)	1.3005E-04 (53)
35	2.2897E-04 (168)	1.8507E-04 (187)	1.3970E-04 (11)	1.2741E-04 (11)	8.1387E-05 (146)
36	6.8085E-04 (150)	4.9510E-04 (195)	2.8365E-04 (195)	1.6918E-04 (195)	1.1819E-04 (150)

PENN. ELECTRIC CO. SHARVILLE

VOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.2258E-03 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150, HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.2117E-03 (146)	8.9791E-04 (146)	6.6231E-04 (228)	5.1755E-04 (165)	5.2359E-04 (283)
2	1.2948E-03 (238)	1.0235E-03 (140)	9.0717E-04 (259)	5.9343E-04 (17)	5.8832E-04 (7)
3	1.2614E-03 (237)	1.0142E-03 (237)	8.2789E-04 (24)	9.4285E-04 (305)	6.5016E-04 (306)
4	1.2928E-03 (131)	1.1412E-03 (23)	7.3124E-04 (225)	9.1335E-04 (15)	8.2154E-04 (23)
5	1.0403E-03 (131)	8.9693E-04 (301)	8.5005E-04 (18)	8.6894E-04 (242)	7.3757E-04 (242)
6	1.2065E-03 (236)	8.5836E-04 (221)	8.5129E-04 (18)	8.5211E-04 (1)	5.6859E-04 (37)
7	1.0898E-03 (236)	8.8191E-04 (14)	8.1157E-04 (16)	8.2543E-04 (14)	7.4879E-04 (308)
8	1.1562E-03 (245)	9.3296E-04 (30)	8.3341E-04 (9)	8.8657E-04 (4)	6.8328E-04 (45)
9	1.2234E-03 (224)	9.2984E-04 (30)	8.5595E-04 (9)	8.2201E-04 (30)	6.8605E-04 (30)
10	1.3339E-03 (230)	8.7989E-04 (148)	8.2384E-04 (2)	9.4756E-04 (326)	7.1198E-04 (326)
11	1.3294E-03 (239)	9.6249E-04 (326)	6.9757E-04 (337)	6.9893E-04 (73)	5.8345E-04 (22)
12	1.2915E-03 (239)	7.9546E-04 (229)	6.2543E-04 (67)	7.0499E-04 (252)	5.4878E-04 (318)
13	1.0947E-03 (136)	8.5788E-04 (136)	7.1210E-04 (2)	8.0954E-04 (2)	4.6886E-04 (13)
14	1.2178E-03 (136)	9.2329E-04 (220)	5.8397E-04 (340)	6.8521E-04 (340)	4.6103E-04 (13)
15	1.1736E-03 (122)	8.8299E-04 (219)	7.3947E-04 (34)	8.3816E-04 (19)	6.1216E-04 (19)
16	1.0924E-03 (219)	8.0300E-04 (220)	6.4423E-04 (126)	7.6419E-04 (126)	4.3138E-04 (126)
17	1.1972E-03 (219)	8.8305E-04 (219)	5.6220E-04 (185)	5.7340E-04 (20)	3.9455E-04 (19)
18	1.1754E-03 (219)	9.0583E-04 (127)	5.2597E-04 (214)	8.4619E-04 (20)	5.5963E-04 (20)
19	9.9679E-04 (127)	7.4747E-04 (127)	5.2171E-04 (20)	5.7054E-04 (20)	5.6800E-04 (218)
20	1.2534E-03 (127)	8.5459E-04 (127)	7.0464E-04 (20)	5.5744E-04 (218)	4.0096E-04 (218)
21	1.0439E-03 (127)	7.2729E-04 (218)	5.3969E-04 (218)	4.6436E-04 (72)	3.4946E-04 (87)
22	1.0522E-03 (180)	7.8023E-04 (180)	5.9671E-04 (218)	5.5199E-04 (218)	4.7365E-04 (291)
23	8.5438E-04 (176)	6.8739E-04 (291)	5.9740E-04 (291)	5.5775E-04 (291)	6.5179E-04 (291)
24	9.7835E-04 (176)	9.1750E-04 (235)	7.5354E-04 (32)	6.6058E-04 (242)	6.6257E-04 (28)
25	9.4494E-04 (235)	1.0712E-03 (235)	6.5174E-04 (235)	7.4651E-04 (32)	6.7626E-04 (43)
26	1.1371E-03 (145)	8.3420E-04 (341)	6.7276E-04 (69)	7.7709E-04 (48)	8.6818E-04 (28)
27	1.0828E-03 (145)	8.9821E-04 (181)	5.3862E-04 (35)	7.8006E-04 (227)	6.6415E-04 (227)
28	8.8518E-04 (161)	6.3719E-04 (179)	5.8584E-04 (334)	7.2354E-04 (121)	6.1128E-04 (121)
29	9.9436E-04 (21)	7.9977E-04 (244)	7.4533E-04 (76)	9.2263E-04 (243)	7.1239E-04 (243)
30	1.3554E-03 (21)	9.9954E-04 (21)	6.7256E-04 (333)	8.9276E-04 (9)	5.7092E-04 (97)
31	1.3600E-03 (137)	9.1224E-04 (333)	7.4770E-04 (123)	1.0743E-03 (10)	7.1471E-04 (10)
32	1.1143E-03 (137)	8.8765E-04 (334)	5.6225E-04 (6)	5.7503E-04 (6)	5.1454E-04 (6)
33	1.1515E-03 (250)	8.5451E-04 (250)	5.1029E-04 (149)	4.9141E-04 (149)	4.1990E-04 (71)
34	1.1964E-03 (135)	8.7696E-04 (150)	5.3314E-04 (11)	5.8146E-04 (53)	4.1293E-04 (53)
35	1.0869E-03 (135)	7.8425E-04 (59)	6.1554E-04 (11)	5.5139E-04 (11)	3.5623E-04 (259)
36	2.2258E-03 (150)	1.5317E-03 (150)	8.3263E-04 (142)	5.2999E-04 (232)	3.0283E-04 (232)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
159	5.8085E-04	36	0.83
195	4.9510E-04	35	1.66
173	4.9147E-04	36	1.66
94	4.8827E-04	10	3.32
230	4.8518E-04	10	0.83
197	4.3622E-04	36	1.66
191	4.3557E-04	36	1.66
137	4.3149E-04	31	0.83
239	4.2024E-04	11	0.83
180	4.1288E-04	35	1.66
122	4.1138E-04	14	0.83
237	4.0572E-04	3	0.83
247	4.0448E-04	11	0.83
73	3.8489E-04	25	6.65
111	3.8347E-04	12	0.83
103	3.7981E-04	12	0.83
166	3.7765E-04	31	0.83
136	3.7354E-04	14	0.83
148	3.7267E-04	10	0.83
151	3.7232E-04	4	0.83

PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY PROJECT 7191

SHAWVILLE STACK 1 (MAX. COND.)

STACK # 1--SHAWVILLE STACK 1 (MAX. COND.)
STACK # 2--SHAWVILLE STACK 3 AND 4 MAXIMUM LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	1000.69	0.00	182.88	3.81	29.39	403.00	334.96
2	NOM	1461.00	0.00	99.06	3.74	22.52	396.00	246.09

RANGE(KM)= 0.93 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 3 JDAY= 73

ISTAB=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
AWS=	7.2	7.2	9.8	8.9	8.9	8.5	8.5	8.1	8.9	8.9	9.8	10.3	9.1	7.6	6.3	5.8	5.8	5.8	4.5	4.5	4.0	3.1	3.1	2.2
TEMP=	271.	271.	270.	270.	270.	269.	268.	268.	268.	269.	269.	269.	270.	270.	270.	270.	270.	269.	269.	270.	270.	270.	270.	269.
AFV=	243.	253.	256.	251.	257.	278.	264.	255.	254.	263.	264.	259.	261.	257.	257.	257.	253.	250.	257.	250.	243.	262.	246.	223.
AFVR=	243.	253.	256.	251.	257.	278.	264.	255.	254.	263.	264.	259.	261.	257.	257.	257.	253.	250.	257.	250.	243.	262.	246.	223.
HLH1=	801.	801.	801.	801.	801.	801.	801.	770.	739.	708.	677.	646.	615.											
	584.	553.	553.	553.	553.	553.	553.	553.	553.	553.	553.	553.	553.											

JYR=75 IHO= 4 JDAY= 94

ISTAB=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
AWS=	14.8	13.4	16.1	15.6	12.5	12.5	11.6	12.1	14.8	16.1	15.6	17.4	16.1	15.6	15.6	15.2	15.2	14.8	12.5	10.3	9.4	9.8	10.7	9.8
TEMP=	268.	267.	267.	267.	266.	266.	266.	266.	267.	267.	267.	268.	269.	269.	269.	268.	268.	267.	267.	266.	266.	266.	266.	266.
AFV=	101.	106.	108.	109.	109.	97.	93.	100.	106.	106.	104.	103.	104.	105.	105.	104.	110.	104.	106.	106.	101.	108.	108.	101.
AFVR=	101.	106.	109.	109.	109.	97.	93.	100.	106.	106.	104.	103.	104.	105.	105.	104.	110.	104.	106.	106.	101.	108.	108.	101.
HLH1=	600.	600.	600.	600.	600.	600.	600.	720.	840.	960.	1080.	1170.												
	1260.	1350.	1500.	1500.	1500.	1500.	1500.	1500.	1500.	1500.	1500.	1500.												

JYR=75 IHO= 4 JDAY=103

ISTAB=	4	4	4	4	4	4	4	3	2	1	1	1	1	1	1	1	1	1	3	4	4	4	3	4
AWS=	5.4	5.4	5.8	6.3	5.8	5.1	4.5	4.0	5.4	6.7	6.3	6.3	7.2	7.2	7.2	6.7	5.8	5.4	5.4	5.8	5.8	5.4	4.5	3.6
TEMP=	270.	269.	269.	269.	267.	267.	267.	270.	273.	274.	275.	275.	275.	275.	275.	274.	277.	279.	279.	276.	274.	273.	272.	271.	270.
AFV=	122.	110.	113.	111.	114.	109.	109.	106.	112.	128.	129.	137.	130.	121.	122.	115.	120.	128.	136.	143.	146.	156.	153.	146.
AFVR=	122.	110.	113.	111.	114.	109.	109.	106.	112.	128.	129.	137.	130.	121.	122.	115.	120.	128.	136.	143.	146.	156.	153.	146.
HLH1=	822.	822.	822.	822.	822.	822.	1039.	1257.	1474.	1692.	1909.	2127.												
	2344.	2561.	2561.	2561.	2561.	2561.	2561.	2561.	2561.	2561.	2561.	2561.												

JYR=75 IHO= 4 JDAY=111

ISTAB=	3	4	3	4	3	4	3	3	1	1	1	1	1	1	1	1	1	1	3	4	4	4	4	4
AWS=	5.8	5.8	8.5	6.7	5.8	4.5	4.9	7.2	8.1	8.1	8.1	7.2	7.6	7.2	7.2	8.1	7.2	6.7	6.3	6.3	5.4	6.3	7.7	3.1
TEMP=	275.	275.	275.	274.	274.	272.	273.	274.	275.	275.	276.	277.	279.	280.	281.	281.	282.	281.	280.	277.	275.	275.	274.	274.
AFV=	84.	80.	96.	116.	125.	113.	100.	101.	117.	126.	128.	129.	124.	110.	112.	120.	111.	114.	128.	128.	152.	159.	168.	153.
AFVR=	84.	80.	96.	116.	125.	113.	100.	101.	117.	126.	128.	129.	124.	111.	112.	120.	111.	114.	128.	128.	152.	159.	168.	153.
HLH1=	2000.	2000.	2000.	2000.	2000.	2000.	2002.	2005.	2008.	2010.	2013.	2016.												
	2018.	2021.	2021.	2021.	2021.	2021.	2021.	2021.	2021.	2021.	2021.	2021.												

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JYR=75 I40= 5 JDAY=122
ISTAR=  3    3    4    4    4    4    4    1    2    2    1    1    1    1    1    1    1    1    1    3    3    4    4    4    4
AWS=  1.9  1.3  0.4  1.3  3.1  4.5  4.0  6.3  6.7  6.7  7.2  7.2  7.2  6.3  5.3  6.7  8.1  7.6  1.8  6.7  3.1  2.7  2.2  2.7
TEMP= 280. 280. 280. 280. 280. 281. 282. 284. 285. 285. 287. 288. 289. 290. 291. 291. 291. 289. 287. 283. 283. 281. 281.
AFV=  252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 141. 144. 148. 148. 149. 147.  73.
AFVR= 252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 141. 144. 148. 148. 149. 147.  73.
HLHI= 598.  598.  598.  598.  598.  598.  723.  848.  973. 1098. 1223. 1347.
     1472. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597.


JYR=75 I40= 5 JDAY=136
ISTAR=  1    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  1.8  2.2  3.1  4.0  2.7  2.2  3.6  4.0  4.0  4.9  4.5  5.4  4.9  4.9  4.9  4.9  4.5  4.9  5.4  5.8  4.9  4.5  4.5  4.9
TEMP= 285. 286. 285. 285. 285. 285. 285. 286. 288. 289. 291. 292. 294. 294. 295. 295. 295. 295. 292. 290. 288. 286. 285. 284.
AFV=   32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
AFVR=  32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
HLHI= 1189. 1189. 1189. 1189. 1189. 1189. 1166. 1145. 1123. 1102. 1080. 1059.
     1037. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016.


JYR=75 I40= 5 JDAY=137
ISTAR=  4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    2    3    3    3    4    4    4
AWS=  3.6  4.0  2.7  3.1  4.5  5.4  6.7  5.8  5.4  4.5  5.4  5.8  5.4  5.8  6.3  5.4  5.4  5.8  4.5  6.7  7.2  4.0  3.1  3.6
TEMP= 283. 282. 281. 280. 279. 279. 281. 285. 288. 291. 294. 295. 297. 296. 296. 295. 295. 294. 292. 291. 289. 288. 287. 287.
AFV=  245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   0. 351. 335. 329.
AFVR= 245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   0. 351. 335. 329.
HLHI=  312.  312.  312.  312.  312.  312.  439.  566.  693.  820.  947. 1074.
     1200. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 I40= 5 JDAY=148
ISTAR=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  3.1  1.3  2.2  2.7  2.7  2.7  3.1  3.1  1.8  3.1  4.9  5.4  4.5  4.5  4.0  4.0  4.0  3.6  4.0  5.8  6.7  4.5  2.2  2.2
TEMP= 284. 283. 282. 281. 280. 280. 282. 286. 289. 291. 292. 293. 295. 296. 297. 298. 298. 298. 296. 293. 290. 289. 287. 285.
AFV=  137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
AFVR= 137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
HLHI=  473.  473.  473.  473.  473.  473.  633.  792.  952. 1111. 1271. 1431.
     1590. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750.


JYR=75 I40= 5 JDAY=150
ISTAR=  4    3    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    3    3    4    4    4
AWS=  5.8  7.6  6.7  6.7  7.2  6.3  7.6  6.3  3.1  4.0  4.9  4.0  4.0  4.5  4.0  4.5  5.4  3.1  4.0  3.1  3.1  4.9  4.5  3.6
TEMP= 283. 283. 283. 283. 283. 283. 283. 293. 293. 294. 294. 295. 297. 300. 299. 299. 299. 297. 296. 294. 294. 293. 291. 292.
AFV=   30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   5.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
AFVR=  30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   5.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
HLHI=  982.  982.  982.  982.  982.  982. 1018. 1055. 1092. 1128. 1165. 1201.
     1238. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275.


JYR=75 I40= 5 JDAY=151
ISTAR=  4    4    4    4    4    4    4    1    2    2    1    1    1    1    1    3    2    3    4    4    3    4    4    4
AWS=  3.6  2.2  3.1  4.0  4.0  5.4  5.8  5.8  7.2  6.7  8.1  8.1  8.5  8.9  9.4  5.8  4.9  3.6  4.0  3.6  5.4  4.5  4.5  5.4
TEMP= 291. 291. 291. 290. 290. 290. 290. 293. 295. 295. 297. 297. 298. 299. 300. 297. 297. 297. 296. 295. 294. 292. 292. 291.
AFV=   23.  22.  29.  29.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
AFVR=  23.  22.  29.  29.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
HLHI=  863.  863.  863.  863.  863.  863.  911.  960. 1008. 1057. 1105. 1153.
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JYR=75 HOUR= 6 JDAY=186

ISTAR=	4	1	4	4	4	4	4	3	1	1	1	1	1	1	1	1	1	1	2	3	4	4	3	4
AWS=	1.8	1.8	1.8	0.9	0.9	2.7	1.1	1.8	1.3	3.6	4.5	6.7	8.5	8.5	9.4	8.9	9.4	7.2	7.2	7.2	7.6	7.2	8.5	6.3
TEMP=	288.	287.	287.	287.	286.	286.	288.	290.	294.	297.	300.	301.	302.	301.	301.	301.	300.	298.	296.	296.	296.	294.	290.	
AFV=	352.	319.	298.	317.	211.	270.	268.	272.	243.	293.	326.	311.	313.	317.	315.	320.	313.	319.	325.	331.	354.	349.	50.	44.
AFVR=	352.	319.	298.	317.	211.	270.	268.	272.	243.	293.	326.	311.	313.	317.	315.	320.	313.	319.	325.	331.	354.	349.	50.	44.
HLHI=	356.	356.	356.	356.	356.	356.	515.	673.	832.	990.	1149.	1308.												
	1466.	1625.	1625.	1625.	1625.	1625.	1625.	1625.	1625.	1625.	1625.	1625.												

JYR=75 HOUR= 6 JDAY=173

ISTAR=	4	4	4	4	4	4	4	1	1	1	1	1	1	1	1	1	1	1	1	4	4	4	4	4
AWS=	0.4	2.2	2.2	2.2	1.3	0.0	0.0	0.9	1.3	2.2	2.7	2.2	3.1	2.7	2.2	1.3	3.1	3.6	2.2	3.1	3.6	3.1	3.1	2.7
TEMP=	284.	287.	287.	286.	286.	286.	288.	292.	295.	297.	299.	301.	302.	302.	302.	304.	303.	300.	299.	296.	295.	294.	294.	292.
AFV=	211.	319.	5.	12.	8.	180.	180.	59.	39.	10.	7.	5.	9.	3.	11.	126.	10.	341.	336.	12.	14.	19.	23.	31.
AFVR=	211.	319.	5.	12.	8.	180.	180.	59.	39.	10.	7.	5.	9.	9.	11.	126.	10.	341.	336.	12.	14.	19.	23.	31.
HLHI=	340.	340.	340.	340.	340.	340.	458.	577.	695.	814.	932.	1051.												
	1169.	1288.	1288.	1288.	1288.	1288.	1288.	1288.	1288.	1288.	1288.	1288.												

JYR=75 HOUR= 7 JDAY=189

ISTAR=	4	4	4	4	4	4	4	3	1	1	1	1	1	1	1	1	1	1	3	4	4	4	4	4
AWS=	1.3	1.3	1.3	1.8	1.8	1.8	0.4	2.7	1.8	1.3	1.3	2.7	2.7	2.7	3.6	2.7	3.6	4.5	4.5	3.1	1.3	2.7	2.2	3.1
TEMP=	289.	289.	286.	288.	288.	288.	288.	290.	291.	293.	298.	300.	302.	303.	301.	300.	301.	299.	297.	296.	295.	294.	294.	293.
AFV=	342.	300.	284.	256.	259.	288.	310.	21.	32.	77.	31.	12.	4.	2.	312.	340.	1.	2.	12.	18.	32.	33.	36.	29.
AFVR=	342.	300.	284.	256.	259.	288.	310.	21.	32.	77.	31.	12.	4.	2.	312.	340.	1.	2.	12.	18.	32.	33.	36.	29.
HLHI=	609.	609.	609.	609.	609.	609.	750.	890.	1031.	1171.	1312.	1453.												
	1593.	1734.	1734.	1734.	1734.	1734.	1734.	1734.	1734.	1734.	1734.	1734.												

JYR=75 HOUR= 7 JDAY=191

ISTAR=	4	4	4	4	4	4	4	1	1	1	1	1	1	1	1	1	1	2	2	3	3	4	4	4
AWS=	1.3	1.8	0.9	1.3	0.9	1.3	2.2	0.4	0.4	1.3	2.2	2.2	2.7	4.0	2.7	4.0	3.1	4.5	5.4	1.0	1.0	1.0	1.3	2.7
TEMP=	284.	287.	286.	285.	285.	284.	287.	290.	293.	296.	297.	297.	298.	299.	301.	301.	298.	298.	298.	298.	298.	298.	297.	297.
AFV=	19.	67.	114.	90.	88.	32.	71.	108.	14.	334.	1.	9.	10.	15.	11.	9.	9.	35.	36.	319.	23.	30.	274.	36.
AFVR=	19.	67.	114.	90.	88.	32.	71.	108.	14.	334.	1.	9.	10.	15.	11.	9.	9.	35.	36.	319.	23.	30.	274.	36.
HLHI=	542.	542.	542.	542.	542.	542.	716.	890.	1065.	1239.	1413.	1588.												
	1762.	1936.	1936.	1936.	1936.	1936.	1936.	1936.	1936.	1936.	1936.	1936.												

JYR=75 HOUR= 7 JDAY=195

ISTAR=	3	3	4	4	4	4	3	1	1	1	1	1	1	1	3	1	1	3	4	4	4	4	4	4
AWS=	2.2	2.2	2.7	2.7	1.8	1.3	1.3	1.3	1.3	2.7	3.6	3.6	4.0	3.1	3.6	4.0	3.6	3.6	3.1	3.1	1.8	0.4	0.9	2.2
TEMP=	291.	290.	290.	290.	290.	290.	290.	291.	292.	293.	295.	297.	299.	299.	295.	297.	297.	294.	293.	293.	293.	292.	291.	291.	291.
AFV=	324.	298.	284.	303.	324.	331.	337.	291.	5.	5.	11.	4.	5.	1.	16.	353.	350.	5.	22.	347.	302.	337.	44.	52.
AFVR=	324.	298.	284.	303.	324.	331.	337.	291.	5.	5.	11.	4.	5.	1.	16.	353.	350.	5.	22.	347.	302.	337.	44.	52.
HLHI=	660.	660.	660.	660.	660.	660.	793.	927.	910.	994.	1077.	1160.												
	1244.	1327.	1327.	1327.	1327.	1327.	1327.	1327.	1327.	1327.	1327.	1327.												

JYR=75 HOUR= 7 JDAY=197

ISTAR=	1	4	1	4	4	4	4	3	1	1	1	1	1	1	1	1	1	1	4	4	4	3	4	4
AWS=	4.1	4.0	2.2	0.4	0.0	0.0	0.4	0.4	1.3	2.7	2.7	3.6	2.7	2.7	2.2	2.2	4.1	4.1	3.1	3.1	0.9	2.2	1.8	0.9
TEMP=	291.	291.	291.	291.	291.	291.	291.	292.	294.	295.	298.	299.	299.	301.	301.	301.	300.	299.	297.	295.	295.	293.	291.	292.
AFV=	259.	274.	248.	190.	305.	293.	279.	314.	14.	7.	3.	10.	56.	13.	12.	28.	12.	2.	356.	25.	112.	294.	268.	139.
AFVR=	259.	274.	248.	190.	305.	293.	279.	314.	14.	7.	3.	10.	56.	13.	12.	28.	12.	2.	356.	25.	112.	294.	268.	139.
HLHI=	510.	510.	510.	510.	510.	510.	682.	1024.	1196.	1366.	1538.	1709.												
	1945.	2117.	2117.	2117.	2117.	2117.	2117.	2117.	2117.	2117.	2117.	2117.												

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JYR=75 IHO= 8 JDAY=230
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  4.0  3.6  4.9  4.0  4.5  5.4  4.5  3.6  4.0  5.4  5.8  5.4  5.8  6.3  7.2  6.3  5.3  5.8  6.3  6.7  7.6  6.7  3.1  3.6
TEMP= 290. 290. 289. 289. 289. 290. 291. 292. 293. 294. 295. 296. 296. 297. 297. 297. 298. 297. 295. 292. 291. 290. 289. 288.
AFV=   40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
AFVR=  40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
HLHI=  957.  967.  967.  967.  967.  967. 1073. 1179. 1284. 1390. 1496. 1601.
      1707. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813.


JYR=75 IHO= 8 JDAY=237
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    2    2    3    4    4    4    4    4
AWS=  7.6  5.8  4.5  4.0  4.9  4.9  4.5  4.0  4.5  4.0  4.0  5.8  5.4  6.7  8.1  8.5  8.5  7.6  7.2  6.3  4.9  4.5  4.9  4.0
TEMP= 295. 294. 294. 293. 293. 292. 293. 294. 296. 297. 299. 300. 301. 302. 301. 302. 301. 301. 299. 298. 296. 295. 294. 293.
AFV=   47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  25.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
AFVR=  47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
HLHI=  501.  501.  501.  501.  501.  501.  538.  574.  611.  648.  684.  721.
      758.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.


JYR=75 IHO= 8 JDAY=239
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  6.3  5.4  4.5  3.6  2.7  3.6  4.0  3.1  2.2  3.6  4.9  6.7  8.1  7.6  6.3  7.2  6.3  5.4  6.7  7.2  6.3  4.9  4.9  3.6
TEMP= 293. 290. 289. 288. 288. 287. 287. 288. 290. 294. 296. 297. 298. 299. 299. 299. 299. 299. 296. 293. 291. 290. 287. 286.
AFV=  114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
AFVR= 114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
HLHI=  439.  439.  439.  439.  439.  439.  544.  649.  754.  859.  965. 1070.
      1175. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280.


JYR=75 IHO= 9 JDAY=247
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    2    4    4    4    4    4    4
AWS=  0.4  0.4  1.3  2.7  3.1  4.5  4.0  4.0  5.4  6.7  6.7  6.7  6.7  7.2  8.1  7.2  7.2  8.5  6.3  5.4  4.0  4.9  6.3  4.5
TEMP= 286. 286. 286. 286. 286. 287. 287. 288. 290. 291. 293. 294. 295. 296. 295. 295. 295. 294. 291. 290. 288. 288. 286. 285.
AFV=   47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
AFVR=  47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
HLHI=   35.   35.   35.   35.   35.   35.  172.  308.  445.  581.  718.  855.
      991. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128.


YEAR BASED ON  20. DAYS
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MEAN, ELECTRIC CO, SHAWVILLE

NOX--SO2

MAXIMUM MEAN CONC= 1.7107E-04 DIRECTION= 36 DISTANCE= 1.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	5.7 KM	13.3 KM
1	9.12835E-05	1.02126E-04	7.54718E-05	5.64973E-05	4.61962E-05
2	7.81491E-05	7.87081E-05	5.47879E-05	4.71737E-05	4.24918E-05
3	7.32553E-05	6.89296E-05	5.51947E-05	4.66590E-05	4.14921E-05
4	6.91540E-05	6.30736E-05	5.17673E-05	4.38489E-05	3.89510E-05
5	5.44530E-05	5.01331E-05	4.10737E-05	3.93927E-05	3.75826E-05
6	4.13911E-05	3.94009E-05	3.73182E-05	3.55819E-05	3.54743E-05
7	3.91781E-05	3.72092E-05	3.62556E-05	3.52643E-05	3.46333E-05
8	4.97012E-05	4.29459E-05	3.91604E-05	3.83404E-05	3.65965E-05
9	7.72490E-05	6.10048E-05	4.81557E-05	4.10871E-05	3.73375E-05
10	1.19528E-04	9.79525E-05	8.60437E-05	6.87070E-05	5.15494E-05
11	1.49884E-04	1.07907E-04	6.91212E-05	5.21977E-05	4.39991E-05
12	1.42901E-04	9.88758E-05	6.38999E-05	4.92851E-05	4.16175E-05
13	1.14879E-04	8.25438E-05	5.46405E-05	4.17321E-05	3.73145E-05
14	8.93314E-05	6.70181E-05	5.14435E-05	4.58482E-05	4.07110E-05
15	6.40765E-05	5.54326E-05	4.39128E-05	3.91383E-05	3.66622E-05
16	5.22794E-05	4.45643E-05	3.79066E-05	3.54723E-05	3.46933E-05
17	4.06318E-05	3.75098E-05	3.51740E-05	3.44246E-05	3.41880E-05
18	3.60021E-05	3.55651E-05	3.55389E-05	3.57696E-05	3.50713E-05
19	3.51791E-05	3.61331E-05	3.54787E-05	3.46062E-05	3.42979E-05
20	3.44584E-05	3.48059E-05	3.44666E-05	3.41507E-05	3.40535E-05
21	3.40442E-05	3.40483E-05	3.40154E-05	3.40024E-05	3.40004E-05
22	3.40018E-05	3.40008E-05	3.40073E-05	3.40055E-05	3.40010E-05
23	3.40155E-05	3.40097E-05	3.42287E-05	3.43512E-05	3.41595E-05
24	3.41789E-05	3.42259E-05	3.66997E-05	4.02281E-05	3.98881E-05
25	3.51090E-05	3.64371E-05	4.70084E-05	5.32347E-05	4.71226E-05
26	3.67852E-05	3.74077E-05	4.07310E-05	4.11839E-05	3.92012E-05
27	3.75993E-05	3.72057E-05	3.66600E-05	3.61956E-05	3.61078E-05
28	3.92252E-05	3.73931E-05	3.53354E-05	3.46174E-05	3.42999E-05
29	4.66831E-05	4.11310E-05	3.65685E-05	3.53755E-05	3.65383E-05
30	6.32642E-05	5.09986E-05	4.03207E-05	3.62454E-05	3.50373E-05
31	7.71692E-05	6.11733E-05	4.51007E-05	3.81407E-05	3.60249E-05
32	7.24934E-05	5.46573E-05	4.51771E-05	3.87691E-05	3.75645E-05
33	5.88334E-05	5.30487E-05	4.58034E-05	4.25063E-05	3.89357E-05
34	5.35126E-05	5.23946E-05	4.40123E-05	3.81317E-05	3.58453E-05
35	5.91205E-05	5.91612E-05	4.74048E-05	4.13907E-05	3.81983E-05
36	1.57292E-04	1.74064E-04	1.09830E-04	6.89400E-05	5.21095E-05

PENN. ELECTRIC CO. SHANVILLE

UNP--SO2

YEARLY MAXIMUM 24-HOUR CONC= 6.4236E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	2.4497E-04 (150)	2.8857E-04 (137)	2.1002E-04 (173)	1.4324E-04 (173)	1.0120E-04 (173)
2	3.1369E-04 (237)	2.1507E-04 (237)	1.3043E-04 (197)	8.1393E-05 (197)	7.5043E-05 (197)
3	3.4319E-04 (237)	3.0355E-04 (237)	1.8530E-04 (237)	1.3659E-04 (237)	1.0143E-04 (237)
4	3.6911E-04 (151)	2.7615E-04 (151)	1.7816E-04 (237)	1.2901E-04 (237)	7.8708E-05 (237)
5	2.7795E-04 (151)	1.9713E-04 (151)	1.0448E-04 (151)	6.3135E-05 (156)	5.9543E-05 (239)
6	1.2231E-04 (151)	8.1757E-05 (151)	5.2989E-05 (189)	4.7316E-05 (189)	5.2467E-05 (148)
7	7.1521E-05 (148)	5.5443E-05 (148)	6.1667E-05 (189)	5.4744E-05 (189)	4.5122E-05 (189)
8	1.5463E-04 (230)	1.1275E-04 (148)	6.2573E-05 (148)	9.1114E-05 (111)	7.2505E-05 (111)
9	3.3622E-04 (230)	2.1306E-04 (230)	1.0312E-04 (230)	8.0058E-05 (94)	5.6986E-05 (94)
10	4.8882E-04 (230)	3.2832E-04 (230)	5.3620E-04 (94)	4.8186E-04 (94)	2.4953E-04 (94)
11	4.7068E-04 (111)	2.9777E-04 (230)	1.8287E-04 (247)	1.4349E-04 (247)	1.0910E-04 (247)
12	4.7443E-04 (111)	2.9329E-04 (103)	1.7015E-04 (111)	1.2501E-04 (111)	8.3125E-05 (111)
13	3.9091E-04 (103)	2.5381E-04 (103)	1.2799E-04 (103)	7.4165E-05 (136)	5.3739E-05 (136)
14	4.1219E-04 (122)	2.5723E-04 (135)	1.7231E-04 (122)	1.4199E-04 (122)	9.3438E-05 (122)
15	3.6908E-04 (122)	2.3159E-04 (122)	1.1986E-04 (122)	8.9299E-05 (148)	5.4929E-05 (148)
16	2.1339E-04 (122)	1.4458E-04 (136)	7.6396E-05 (136)	5.2298E-05 (136)	4.3072E-05 (136)
17	1.1020E-04 (136)	7.9878E-05 (136)	5.0555E-05 (136)	4.0626E-05 (135)	3.7048E-05 (136)
18	6.3335E-05 (136)	6.1792E-05 (136)	6.3991E-05 (136)	6.9223E-05 (136)	5.5377E-05 (136)
19	5.6559E-05 (136)	7.6395E-05 (136)	6.3529E-05 (136)	4.6118E-05 (136)	3.9756E-05 (136)
20	4.3114E-05 (136)	5.0108E-05 (136)	4.3332E-05 (136)	3.7013E-05 (136)	3.5070E-05 (135)
21	3.4484E-05 (136)	3.4355E-05 (136)	3.4307E-05 (136)	3.4049E-05 (136)	3.4007E-05 (136)
22	3.4014E-05 (136)	3.4009E-05 (136)	3.4143E-05 (166)	3.4110E-05 (166)	3.4021E-05 (166)
23	3.4310E-05 (137)	3.4128E-05 (137)	3.8351E-05 (166)	1.0842E-05 (156)	3.7184E-05 (156)
24	3.7556E-05 (137)	1.6791E-05 (137)	5.7753E-05 (73)	1.0050E-04 (73)	1.1298E-04 (73)
25	5.5820E-05 (137)	5.8729E-05 (73)	2.7701E-04 (73)	4.0550E-04 (73)	2.9111E-04 (73)
26	8.7259E-05 (137)	9.8273E-05 (137)	1.2739E-04 (73)	1.5655E-04 (73)	1.2676E-04 (73)
27	9.2596E-05 (137)	9.5691E-05 (137)	6.0649E-05 (137)	6.1013E-05 (73)	5.5032E-05 (166)
28	4.8631E-05 (137)	6.7351E-05 (137)	4.7762E-05 (166)	4.0145E-05 (137)	3.6986E-05 (166)
29	1.6767E-04 (166)	1.1083E-04 (166)	6.3464E-05 (166)	4.6372E-05 (156)	7.5896E-05 (195)
30	1.2183E-04 (166)	1.0466E-04 (137)	8.4950E-05 (137)	5.6437E-05 (137)	4.4430E-05 (147)
31	1.4330E-04 (166)	2.0314E-04 (137)	1.4416E-04 (137)	7.7935E-05 (137)	5.5378E-05 (147)
32	1.9990E-04 (166)	2.4609E-04 (166)	1.1693E-04 (166)	6.2960E-05 (166)	6.4760E-05 (195)
33	2.1140E-04 (166)	1.3206E-04 (166)	9.2981E-05 (166)	7.5088E-05 (166)	6.0117E-05 (137)
34	1.6755E-01 (150)	1.5976E-04 (150)	1.0440E-04 (150)	6.2378E-05 (150)	4.7257E-05 (150)
35	1.9535E-04 (150)	1.5258E-04 (150)	8.6619E-05 (197)	7.2004E-05 (150)	6.7121E-05 (150)
36	6.4236E-04 (150)	5.5941E-04 (195)	3.4171E-04 (195)	1.9506E-04 (195)	1.1792E-04 (150)

PEAK, ELECTRIC CO. SHAWVILLE

...=SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.09195E-03 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150, HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE / DIR	0.8 KM	1.7 KM	3.1 KM	4.7 KM	13.8 KM
1	9.62315E-04 (150)	9.61455E-04 (191)	5.56915E-04 (173)	3.75545E-04 (173)	2.97205E-04 (173)
2	1.74141E-03 (237)	7.20955E-04 (237)	4.64875E-04 (197)	3.06905E-04 (197)	2.52515E-04 (189)
3	1.21215E-03 (237)	9.63325E-04 (237)	6.78355E-04 (237)	5.22605E-04 (237)	4.04445E-04 (237)
4	1.29975E-03 (151)	9.22315E-04 (237)	6.02605E-04 (237)	4.35525E-04 (237)	2.52245E-04 (237)
5	9.44775E-04 (151)	6.54915E-04 (151)	4.41275E-04 (151)	3.67485E-04 (173)	2.30445E-04 (239)
6	3.45145E-04 (151)	2.65855E-04 (151)	1.85915E-04 (189)	1.40535E-04 (189)	1.81405E-04 (148)
7	2.65295E-04 (148)	1.75145E-04 (149)	2.55345E-04 (189)	1.49955E-04 (189)	1.22975E-04 (189)
8	7.40365E-04 (149)	4.97405E-04 (149)	2.51945E-04 (111)	4.89365E-04 (111)	3.41685E-04 (111)
9	1.14075E-03 (149)	7.89255E-04 (148)	4.52685E-04 (94)	3.99805E-04 (94)	2.17795E-04 (94)
10	1.33705E-03 (240)	9.53955E-04 (148)	6.66415E-04 (94)	5.40975E-04 (94)	3.49405E-04 (94)
11	1.35715E-03 (239)	9.08865E-04 (247)	4.43805E-04 (247)	4.49485E-04 (247)	3.51495E-04 (247)
12	1.32455E-03 (239)	7.50245E-04 (249)	4.26175E-04 (111)	3.62885E-04 (111)	2.14455E-04 (111)
13	1.15405E-03 (104)	9.05165E-04 (136)	4.63885E-04 (136)	2.19425E-04 (136)	1.23635E-04 (136)
14	1.20265E-03 (122)	7.80885E-04 (136)	4.38105E-04 (122)	4.77385E-04 (122)	2.79875E-04 (122)
15	1.19005E-03 (122)	7.08985E-04 (136)	3.14425E-04 (122)	3.15345E-04 (149)	2.01425E-04 (148)
16	8.51815E-04 (136)	5.77485E-04 (136)	2.50645E-04 (136)	1.31005E-04 (136)	8.34985E-05 (136)
17	4.69265E-04 (136)	3.05665E-04 (136)	1.35785E-04 (136)	7.69215E-05 (136)	5.45025E-05 (136)
18	2.42255E-04 (136)	2.38325E-04 (136)	2.67485E-04 (136)	3.14025E-04 (136)	2.04485E-04 (136)
19	2.11545E-04 (136)	3.72115E-04 (136)	2.68985E-04 (136)	1.30975E-04 (136)	8.00345E-05 (136)
20	1.06775E-04 (136)	1.62935E-04 (136)	1.08655E-04 (136)	5.81055E-05 (136)	4.25585E-05 (136)
21	4.10715E-05 (136)	4.17315E-05 (136)	3.64585E-05 (136)	3.43825E-05 (136)	3.40565E-05 (136)
22	3.31465E-05 (136)	3.40715E-05 (136)	3.51475E-05 (166)	3.49795E-05 (166)	3.41665E-05 (166)
23	3.64795E-05 (137)	3.50255E-05 (137)	6.88095E-05 (166)	9.95375E-05 (166)	5.94765E-05 (166)
24	6.24505E-05 (137)	5.43305E-05 (137)	1.84855E-04 (73)	3.39225E-04 (73)	5.30815E-04 (74)
25	2.03565E-04 (137)	2.24795E-04 (137)	6.09995E-04 (73)	7.01125E-04 (73)	6.27815E-04 (73)
26	4.59435E-04 (137)	5.48035E-04 (137)	4.18735E-04 (73)	4.56845E-04 (73)	3.04675E-04 (73)
27	4.83565E-04 (137)	4.43555E-04 (137)	2.46505E-04 (137)	2.49505E-04 (73)	2.02245E-04 (166)
28	3.64805E-04 (137)	2.58835E-04 (166)	1.35595E-04 (166)	8.08035E-05 (166)	5.74185E-05 (166)
29	5.00385E-04 (166)	4.09105E-04 (166)	2.02885E-04 (166)	1.13525E-04 (166)	2.79105E-04 (195)
30	9.85135E-04 (137)	5.81585E-04 (137)	2.36085E-04 (137)	1.18715E-04 (137)	7.62565E-05 (137)
31	1.34275E-03 (137)	8.21455E-04 (137)	4.25635E-04 (137)	1.82285E-04 (137)	1.05495E-04 (137)
32	1.08955E-03 (137)	6.67435E-04 (166)	3.27735E-04 (166)	1.38145E-04 (166)	2.79505E-04 (195)
33	7.13455E-04 (150)	4.36255E-04 (150)	1.43195E-04 (150)	8.08145E-05 (166)	2.19075E-04 (137)
34	9.44605E-04 (150)	7.90595E-04 (150)	5.06065E-04 (150)	2.33315E-04 (150)	1.24605E-04 (150)
35	8.71825E-04 (150)	4.41795E-04 (195)	3.46095E-04 (197)	2.81395E-04 (137)	2.50015E-04 (150)
36	2.09845E-04 (150)	1.61235E-03 (195)	9.64755E-04 (173)	5.91305E-04 (173)	2.91045E-04 (195)

SORTED DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	6.4236E-04	36	0.83
96	5.7620E-04	10	3.32
195	5.5481E-04	34	1.66
173	5.0791E-04	36	1.66
230	4.8489E-04	10	0.83
197	4.8356E-04	36	1.66
191	4.8270E-04	34	1.66
111	4.7833E-04	12	0.83
189	4.7192E-04	34	1.66
103	4.6776E-04	12	0.83
166	4.4930E-04	31	0.83
247	4.4859E-04	11	0.83
239	4.2461E-04	11	0.83
137	4.2102E-04	31	0.83
122	4.1218E-04	14	0.83
73	4.0650E-04	25	5.65
237	3.9919E-04	3	0.83
151	3.6911E-04	4	0.83
136	3.5783E-04	14	0.83
148	3.4953E-04	10	0.83

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PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY    PROJECT 7101

SHAWVILLE PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.68   BACKGR=     34.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1                                                                                1  1  1  1  1  1  1
```

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1080.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1350.0	1300.0	1400.0	1880.0	2160.0
2	1200.0	1200.0	1600.0	2174.0	2100.0
3	1160.0	1460.0	1590.0	1760.0	2000.0
4	1120.0	1400.0	1540.0	1600.0	1900.0
5	1200.0	1360.0	1520.0	1600.0	1800.0
6	1250.0	1340.0	1350.0	1567.0	1560.0
7	1220.0	1320.0	1260.0	1560.0	1500.0
8	1180.0	1300.0	1540.0	1500.0	1481.0
9	1100.0	1300.0	1340.0	1627.0	1549.0
10	1070.0	1320.0	1504.0	1639.0	1564.0
11	1050.0	1320.0	1580.0	1766.0	1668.0
12	1160.0	1060.0	1340.0	1836.0	1744.0
13	1320.0	1150.0	1300.0	1720.0	1700.0
14	1400.0	1420.0	1420.0	1743.0	1800.0
15	1420.0	1520.0	1605.0	1700.0	1900.0
16	1440.0	1590.0	1580.0	1900.0	2100.0
17	1440.0	1300.0	1580.0	1900.0	2100.0
18	1440.0	1260.0	1260.0	1780.0	1840.0
19	1420.0	1200.0	1320.0	1700.0	1620.0
20	1400.0	1100.0	1400.0	1625.0	1540.0
21	1200.0	1080.0	1480.0	1540.0	1520.0
22	1060.0	1300.0	1572.0	1440.0	1620.0
23	1050.0	1460.0	1540.0	1120.0	1537.0
24	1200.0	1500.0	1540.0	1551.0	1796.0
25	1200.0	1400.0	1540.0	1505.0	1773.0
26	1260.0	1440.0	1520.0	1660.0	2120.0
27	1380.0	1460.0	1560.0	1880.0	2320.0
28	1440.0	1400.0	1540.0	1760.0	2251.0
29	1460.0	1440.0	1560.0	2140.0	2224.0
30	1460.0	1480.0	1580.0	2040.0	2253.0
31	1480.0	1500.0	1560.0	2100.0	2293.0
32	1500.0	1540.0	1460.0	2000.0	2220.0
33	1500.0	1520.0	1400.0	1841.0	2240.0
34	1480.0	1400.0	1746.0	2218.0	2056.0
35	1460.0	1200.0	1640.0	1960.0	2220.0
36	1440.0	1463.0	1380.0	1900.0	2405.0

STACK # 1--SHAWVILLE STACKS 1&2 SRC-SO2
STACK # 2--SHAWVILLE STACK 3 AND 4 SRC-SO2 NORMAL LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	254.00	0.00	182.88	3.81	21.82	391.00	248.77
2	NOM	397.00	0.00	99.06	3.73	18.84	386.00	205.87

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.26 1.09 0.98 0.87 1.10 0.92 0.87 1.08 0.98 0.80 1.05 1.00

YEAR BASED ON 365. DAYS

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

MAXIMUM MEAN CONC= 4.2402E-05 DIRECTION= 10 DISTANCE= 0.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	3.93887E-05	4.02598E-05	3.81240E-05	3.63020E-05	3.53394E-05
2	4.03398E-05	4.11762E-05	3.87094E-05	3.67002E-05	3.57269E-05
3	4.07570E-05	4.15596E-05	3.90879E-05	3.70296E-05	3.71370E-05
4	4.02391E-05	4.09532E-05	3.98152E-05	3.86902E-05	3.70745E-05
5	3.92570E-05	3.98400E-05	3.93110E-05	3.84724E-05	3.68830E-05
6	3.90473E-05	3.95012E-05	3.94768E-05	3.87409E-05	3.69997E-05
7	3.97372E-05	4.02457E-05	4.06643E-05	3.99758E-05	3.76515E-05
8	4.08790E-05	4.14964E-05	4.15054E-05	4.03717E-05	3.79231E-05
9	4.19218E-05	4.21643E-05	4.13548E-05	3.99230E-05	3.76448E-05
10	4.24020E-05	4.18738E-05	4.04362E-05	3.89536E-05	3.71103E-05
11	4.17605E-05	4.05518E-05	3.88013E-05	3.75171E-05	3.61021E-05
12	4.01323E-05	3.91372E-05	3.79177E-05	3.69899E-05	3.58645E-05
13	3.84141E-05	3.79242E-05	3.69102E-05	3.62603E-05	3.55253E-05
14	3.71345E-05	3.70164E-05	3.62322E-05	3.56771E-05	3.50898E-05
15	3.62869E-05	3.63566E-05	3.57771E-05	3.54569E-05	3.49594E-05
16	3.56576E-05	3.56788E-05	3.51574E-05	3.48114E-05	3.45200E-05
17	3.52690E-05	3.53152E-05	3.50109E-05	3.48954E-05	3.46031E-05
18	3.49817E-05	3.50493E-05	3.47998E-05	3.46559E-05	3.44469E-05
19	3.47637E-05	3.48085E-05	3.47453E-05	3.46779E-05	3.44708E-05
20	3.46879E-05	3.47218E-05	3.45201E-05	3.43799E-05	3.42783E-05
21	3.46446E-05	3.46901E-05	3.44928E-05	3.43770E-05	3.42401E-05
22	3.46419E-05	3.47490E-05	3.46110E-05	3.45346E-05	3.44106E-05
23	3.47968E-05	3.50689E-05	3.48788E-05	3.48485E-05	3.47312E-05
24	3.50962E-05	3.56065E-05	3.54616E-05	3.56089E-05	3.53849E-05
25	3.53285E-05	3.60194E-05	3.62011E-05	3.66138E-05	3.61838E-05
26	3.54193E-05	3.60151E-05	3.58467E-05	3.58685E-05	3.56249E-05
27	3.54741E-05	3.58616E-05	3.56156E-05	3.57712E-05	3.55455E-05
28	3.58851E-05	3.62278E-05	3.60078E-05	3.60015E-05	3.54475E-05
29	3.68746E-05	3.71572E-05	3.70126E-05	3.71065E-05	3.62557E-05
30	3.78162E-05	3.78156E-05	3.71275E-05	3.66722E-05	3.57401E-05
31	3.78422E-05	3.76542E-05	3.67987E-05	3.60643E-05	3.53231E-05
32	3.71341E-05	3.69941E-05	3.60844E-05	3.54655E-05	3.50056E-05
33	3.63474E-05	3.63650E-05	3.57035E-05	3.51898E-05	3.47727E-05
34	3.59709E-05	3.60757E-05	3.55182E-05	3.51590E-05	3.48931E-05
35	3.59881E-05	3.60652E-05	3.54547E-05	3.49721E-05	3.46928E-05
36	4.10829E-05	4.17672E-05	3.85579E-05	3.62423E-05	3.52062E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 2.4259E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.0905E-04 (150)	1.1003E-04 (173)	8.1737E-05 (173)	6.3659E-05 (165)	6.1209E-05 (283)
2	1.2890E-04 (140)	1.0989E-04 (140)	7.9436E-05 (259)	6.2644E-05 (265)	5.9899E-05 (7)
3	1.5389E-04 (237)	1.2067E-04 (237)	9.3891E-05 (306)	1.2260E-04 (306)	9.5207E-05 (306)
4	1.4313E-04 (151)	1.1342E-04 (151)	1.0490E-04 (56)	1.0702E-04 (56)	8.3387E-05 (23)
5	1.4258E-04 (131)	1.0310E-04 (131)	9.3061E-05 (11)	8.6984E-05 (330)	7.1732E-05 (242)
6	1.1880E-04 (221)	1.0416E-04 (221)	1.1559E-04 (19)	1.1521E-04 (19)	7.6228E-05 (19)
7	1.3249E-04 (221)	1.0893E-04 (221)	1.2813E-04 (14)	1.3438E-04 (14)	1.0153E-04 (4)
8	1.1711E-04 (256)	1.0582E-04 (90)	1.4035E-04 (44)	1.3317E-04 (44)	9.2967E-05 (45)
9	1.3126E-04 (230)	1.1035E-04 (256)	1.2392E-04 (30)	1.4003E-04 (30)	1.0405E-04 (30)
10	1.7942E-04 (230)	1.2902E-04 (230)	1.8091E-04 (94)	1.4431E-04 (94)	1.1315E-04 (318)
11	1.6540E-04 (230)	1.1752E-04 (230)	1.2100E-04 (79)	1.2737E-04 (79)	8.5196E-05 (79)
12	1.5249E-04 (239)	1.0321E-04 (67)	1.1932E-04 (67)	1.0286E-04 (67)	6.8505E-05 (96)
13	1.2936E-04 (122)	9.9350E-05 (136)	8.6590E-05 (2)	8.1231E-05 (2)	7.1992E-05 (303)
14	1.5561E-04 (122)	1.0631E-04 (136)	8.3353E-05 (122)	7.1923E-05 (302)	6.7016E-05 (302)
15	1.4172E-04 (122)	9.8931E-05 (220)	9.8861E-05 (86)	9.4674E-05 (86)	7.0411E-05 (86)
16	1.1540E-04 (219)	9.7806E-05 (219)	6.6010E-05 (219)	6.7645E-05 (34)	5.8205E-05 (34)
17	1.2962E-04 (219)	1.0613E-04 (219)	6.7755E-05 (219)	5.9366E-05 (33)	5.7563E-05 (31)
18	1.2110E-04 (127)	1.1372E-04 (127)	7.4636E-05 (127)	8.4615E-05 (20)	6.5274E-05 (20)
19	1.3612E-04 (127)	1.1035E-04 (127)	7.4171E-05 (127)	8.0022E-05 (20)	7.1208E-05 (218)
20	1.3754E-04 (127)	1.0094E-04 (127)	7.2696E-05 (218)	6.7063E-05 (218)	5.4732E-05 (218)
21	1.1305E-04 (127)	8.9908E-05 (180)	6.9515E-05 (218)	5.3766E-05 (180)	4.6671E-05 (180)
22	1.1464E-04 (180)	9.3801E-05 (180)	7.6876E-05 (218)	7.7351E-05 (218)	5.9229E-05 (218)
23	9.5915E-05 (180)	8.3863E-05 (291)	7.9064E-05 (291)	8.7638E-05 (291)	8.2718E-05 (291)
24	1.0064E-04 (176)	1.1195E-04 (176)	9.3788E-05 (291)	8.6252E-05 (33)	8.1203E-05 (33)
25	8.8356E-05 (176)	9.9961E-05 (176)	1.2243E-04 (73)	1.4695E-04 (73)	1.0353E-04 (73)
26	9.4309E-05 (145)	1.0228E-04 (145)	7.1846E-05 (145)	8.1578E-05 (28)	9.'584E-05 (28)
27	8.1829E-05 (145)	9.7712E-05 (178)	7.7686E-05 (178)	8.1342E-05 (121)	8.8998E-05 (121)
28	9.3921E-05 (120)	8.5404E-05 (178)	6.8449E-05 (244)	9.7820E-05 (121)	8.7877E-05 (121)
29	1.3331E-04 (120)	1.0382E-04 (120)	9.9804E-05 (243)	1.1600E-04 (243)	9.2908E-05 (243)
30	1.3601E-04 (120)	1.0941E-04 (120)	8.4281E-05 (120)	9.1333E-05 (8)	7.0767E-05 (162)
31	1.6215E-04 (137)	1.1717E-04 (137)	1.1160E-04 (123)	1.2498E-04 (123)	8.7679E-05 (123)
32	1.3311E-04 (137)	9.2734E-05 (137)	6.6984E-05 (272)	7.3268E-05 (6)	6.2982E-05 (6)
33	1.0421E-04 (258)	8.7903E-05 (250)	6.2824E-05 (258)	5.8339E-05 (71)	5.6477E-05 (71)
34	1.1071E-04 (258)	8.3421E-05 (258)	5.9631E-05 (211)	6.1721E-05 (53)	6.4855E-05 (53)
35	9.6859E-05 (168)	8.2519E-05 (187)	6.8206E-05 (11)	6.4046E-05 (11)	4.9392E-05 (146)
36	2.4259E-04 (150)	1.8222E-04 (195)	1.1407E-04 (195)	7.6970E-05 (195)	6.1008E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 7.4079E-04 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	4.1350E-04 (146)	3.1138E-04 (146)	2.3517E-04 (228)	1.8974E-04 (165)	1.9119E-04 (283)
2	4.4001E-04 (238)	3.5235E-04 (140)	2.8165E-04 (259)	2.1421E-04 (17)	2.1226E-04 (7)
3	4.2977E-04 (237)	3.4917E-04 (237)	2.8907E-04 (24)	3.2988E-04 (306)	2.3227E-04 (306)
4	4.3631E-04 (131)	3.9064E-04 (23)	2.5782E-04 (225)	2.8492E-04 (15)	2.8788E-04 (23)
5	3.5827E-04 (131)	3.1094E-04 (301)	2.9795E-04 (18)	3.0448E-04 (242)	2.6305E-04 (242)
6	4.1162E-04 (236)	2.9866E-04 (221)	2.9837E-04 (18)	2.9732E-04 (1)	2.0566E-04 (37)
7	3.7406E-04 (236)	3.0712E-04 (14)	2.8564E-04 (16)	2.8884E-04 (14)	2.6327E-04 (308)
8	3.9481E-04 (245)	3.2369E-04 (30)	2.9273E-04 (9)	3.3974E-04 (4)	2.4280E-04 (45)
9	4.1727E-04 (224)	3.2262E-04 (30)	2.9991E-04 (9)	2.8895E-04 (42)	2.4344E-04 (30)
10	4.5288E-04 (230)	3.0560E-04 (148)	2.8947E-04 (2)	3.2710E-04 (326)	2.5177E-04 (326)
11	3.5119E-04 (239)	3.1694E-04 (326)	2.4876E-04 (337)	2.4816E-04 (79)	2.1124E-04 (22)
12	4.3909E-04 (239)	2.7930E-04 (229)	2.2546E-04 (67)	2.5019E-04 (252)	1.9950E-04 (318)
13	3.7594E-04 (136)	2.9897E-04 (136)	2.5363E-04 (2)	2.8358E-04 (2)	1.7374E-04 (13)
14	4.1401E-04 (136)	3.1973E-04 (220)	2.1212E-04 (340)	2.4364E-04 (340)	1.7114E-04 (13)
15	4.0103E-04 (122)	3.0716E-04 (219)	2.6049E-04 (34)	2.9313E-04 (19)	2.1957E-04 (19)
16	3.7188E-04 (219)	2.8121E-04 (220)	2.3168E-04 (126)	2.6901E-04 (126)	1.6149E-04 (126)
17	4.0889E-04 (219)	3.0701E-04 (219)	2.0354E-04 (185)	2.0776E-04 (20)	1.4971E-04 (19)
18	4.0171E-04 (219)	3.1441E-04 (127)	1.9224E-04 (214)	2.9561E-04 (20)	2.0269E-04 (20)
19	3.4457E-04 (127)	2.6307E-04 (127)	1.9063E-04 (20)	2.0678E-04 (20)	2.0508E-04 (218)
20	4.2727E-04 (127)	2.9741E-04 (127)	2.4938E-04 (20)	2.0245E-04 (218)	1.5159E-04 (218)
21	3.6133E-04 (127)	2.5703E-04 (218)	1.9599E-04 (218)	1.7256E-04 (72)	1.3527E-04 (87)
22	3.6557E-04 (180)	2.7356E-04 (180)	2.1510E-04 (218)	2.0077E-04 (218)	1.7513E-04 (291)
23	2.9861E-04 (176)	2.4425E-04 (291)	2.1459E-04 (291)	2.0290E-04 (291)	2.3274E-04 (291)
24	3.3868E-04 (176)	3.1734E-04 (235)	2.6501E-04 (32)	2.3617E-04 (242)	2.3547E-04 (28)
25	3.2784E-04 (235)	3.6655E-04 (235)	2.3177E-04 (235)	2.6351E-04 (32)	2.4012E-04 (43)
26	4.0894E-04 (145)	2.9056E-04 (145)	2.3905E-04 (69)	2.7328E-04 (48)	3.0139E-04 (28)
27	3.7208E-04 (145)	3.1161E-04 (181)	1.9618E-04 (35)	2.7447E-04 (227)	2.3611E-04 (227)
28	3.0891E-04 (161)	2.2817E-04 (179)	2.1345E-04 (334)	2.5633E-04 (121)	2.1932E-04 (121)
29	3.4366E-04 (21)	2.8081E-04 (244)	2.6771E-04 (76)	3.1944E-04 (243)	2.5128E-04 (243)
30	4.6007E-04 (21)	3.4374E-04 (21)	2.3853E-04 (333)	3.1055E-04 (8)	2.0640E-04 (87)
31	4.6130E-04 (137)	3.1592E-04 (333)	2.6503E-04 (123)	3.7267E-04 (10)	2.5561E-04 (10)
32	3.8209E-04 (137)	3.0775E-04 (334)	2.0410E-04 (6)	2.0832E-04 (6)	1.8806E-04 (6)
33	3.9438E-04 (250)	2.9745E-04 (250)	1.8817E-04 (149)	1.7806E-04 (149)	1.5877E-04 (71)
34	4.0862E-04 (135)	3.0520E-04 (150)	1.9564E-04 (11)	2.4284E-04 (53)	2.2633E-04 (53)
35	3.7331E-04 (135)	2.5060E-04 (59)	2.2214E-04 (11)	2.0060E-04 (11)	1.3732E-04 (259)
36	7.4079E-04 (150)	5.1477E-04 (150)	2.9001E-04 (142)	1.9431E-04 (232)	1.2092E-04 (232)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	2.4259E-04	36	0.83
195	1.8222E-04	36	1.66
173	1.8105E-04	36	1.66
94	1.8091E-04	10	3.32
230	1.7942E-04	10	0.83
197	1.6327E-04	36	1.66
191	1.6308E-04	36	1.66
137	1.6215E-04	31	0.83
239	1.5846E-04	11	0.83
189	1.5573E-04	36	1.66
122	1.5561E-04	14	0.83
237	1.5389E-04	3	0.83
247	1.5346E-04	11	0.83
73	1.4695E-04	25	6.65
111	1.4663E-04	12	0.83
103	1.4545E-04	12	0.83
166	1.4470E-04	31	0.83
136	1.4348E-04	14	0.83
148	1.4322E-04	10	0.83
151	1.4313E-04	4	0.83

PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY PROJECT 7101

SRC MAX. COND.

STACK 1 1--SHAWVILLE STACK 1 (MAX. COND.) SRC
STACK 2 2--SHAWVILLE STACK 364 SRC-SO2 MAXIMUM LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	312.00	0.00	182.88	3.81	29.38	403.00	334.96
2	NOM	476.00	0.00	99.06	3.73	22.52	396.00	246.08

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 3 JDAY= 73
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 7.2 7.2 9.8 8.9 8.9 8.5 8.5 8.1 8.9 8.9 9.8 10.3 8.1 7.6 6.3 5.8 5.8 5.8 4.5 4.5 4.0 3.1 3.1 2.2
TEMP= 271. 271. 270. 270. 270. 269. 268. 268. 268. 269. 269. 269. 270. 270. 270. 270. 270. 269. 269. 270. 270. 270. 270. 269.
AFV= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
AFVR= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
HLH1= 801. 801. 801. 801. 801. 801. 770. 739. 708. 677. 646. 615.
584. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553.

JYR=75 IHO= 4 JDAY= 94
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 14.8 13.4 16.1 15.6 12.5 12.5 11.6 12.1 14.8 16.1 15.6 17.4 16.1 15.6 15.6 15.2 15.2 14.8 12.5 10.3 9.4 9.8 10.7 9.8
TEMP= 268. 267. 267. 267. 266. 266. 266. 266. 267. 267. 267. 268. 269. 269. 268. 268. 268. 267. 267. 266. 266. 266. 266. 266.
AFV= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
AFVR= 101. 106. 109. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
HLH1= 600. 600. 600. 600. 600. 600. 600. 720. 840. 960. 1060. 1170.
1280. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.

JYR=75 IHO= 4 JDAY=103
ISTAB= 4 4 4 4 4 4 4 3 2 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.4 5.4 5.8 6.3 5.8 5.4 4.5 4.0 5.4 6.7 6.3 6.3 7.2 7.2 7.2 6.7 5.8 5.4 5.4 5.8 5.8 5.4 4.5 3.6
TEMP= 270. 269. 269. 269. 267. 267. 267. 270. 271. 274. 275. 275. 275. 275. 276. 277. 278. 279. 276. 274. 273. 272. 271. 270.
AFV= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
AFVR= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
HLH1= 822. 822. 822. 822. 822. 822. 1039. 1257. 1474. 1692. 1909. 2127.
2344. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561.

JYR=75 IHO= 4 JDAY=111
ISTAB= 3 3 3 3 3 4 3 3 1 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.9 5.8 8.5 6.7 6.3 4.5 4.9 7.2 8.1 8.1 8.1 7.2 7.6 7.2 7.2 8.1 7.2 6.7 6.3 6.3 5.4 6.3 2.7 3.1
TEMP= 275. 275. 275. 274. 274. 272. 273. 274. 275. 275. 276. 277. 279. 280. 281. 281. 282. 281. 280. 277. 276. 275. 274. 274.
AFV= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
AFVR= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
HLH1= 2000. 2000. 2000. 2000. 2000. 2000. 2002. 2005. 2008. 2010. 2013. 2016.
2018. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021.

```
JYR=75 IMO= 5 JDAY=122
ISTAR=  3    3    4    4    4    4    3    2    2    1    1    1    1    1    1    1    1    1    3    3    4    4    4    4
AWS=  1.8  1.3  0.4  1.3  3.1  4.5  4.9  6.3  6.7  6.7  7.2  7.2  7.7  6.3  6.3  6.7  8.1  7.6  1.8  6.7  3.1  2.7  2.2  2.2
TEMP= 280. 280. 280. 280. 280. 281. 282. 284. 285. 285. 287. 288. 289. 290. 291. 291. 291. 291. 289. 287. 283. 283. 281. 281.
AFV=  252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
AFVR= 252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
HLHI=  598.  598.  598.  598.  598.  598.  723.  848.  973. 1098. 1223. 1347.
      1472. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597.


JYR=75 IMO= 5 JDAY=136
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  1.8  2.2  3.1  4.0  2.7  2.2  3.6  4.0  4.0  4.9  4.5  5.4  4.9  4.9  4.9  4.9  4.5  4.9  5.4  5.8  4.9  4.5  4.5  4.9
TEMP= 286. 286. 285. 285. 285. 285. 285. 286. 288. 289. 291. 292. 294. 294. 295. 295. 295. 295. 292. 290. 288. 286. 285. 284.
AFV=   32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
AFVR=  32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
HLHI= 1188. 1188. 1188. 1188. 1188. 1188. 1166. 1145. 1123. 1102. 1080. 1059.
      1037. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016.


JYR=75 IMO= 5 JDAY=137
ISTAR=  4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    2    3    3    3    4    4    4
AWS=  3.6  4.0  2.7  3.1  4.5  5.4  6.7  5.8  5.4  4.5  5.4  5.8  5.4  5.9  6.3  5.4  5.4  5.4  5.8  4.5  6.7  7.2  4.0  3.1  3.6
TEMP= 283. 282. 281. 280. 279. 279. 281. 285. 288. 291. 294. 295. 297. 296. 296. 295. 295. 294. 292. 291. 289. 288. 287. 287.
AFV=  245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 350.   0. 351. 335. 329.
AFVR= 245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 350.   0. 351. 335. 329.
HLHI=  312.  312.  312.  312.  312.  312.  439.  566.  693.  820.  947. 1074.
      1200. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IMO= 5 JDAY=148
ISTAR=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  3.1  1.3  2.2  2.7  2.7  2.7  3.1  3.1  1.8  3.1  4.9  5.4  4.5  4.5  4.0  4.0  4.0  3.6  4.0  5.8  6.7  4.5  2.2  2.2
TEMP= 284. 283. 282. 281. 280. 280. 287. 286. 289. 291. 292. 293. 295. 296. 297. 298. 298. 298. 296. 293. 290. 289. 287. 285.
AFV=  137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
AFVR= 137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
HLHI=  473.  473.  473.  473.  473.  473.  633.  792.  952. 1111. 1271. 1431.
      1590. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750.


JYR=75 IMO= 5 JDAY=150
ISTAR=  4    3    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    3    3    4    4    4
AWS=  5.8  7.6  6.7  6.7  7.2  6.3  7.6  6.3  3.1  4.0  4.9  4.0  4.0  4.5  4.9  4.5  5.4  3.1  4.0  3.1  3.1  4.9  4.5  3.6
TEMP= 283. 283. 283. 283. 283. 283. 283. 283. 293. 294. 294. 295. 297. 300. 299. 299. 299. 297. 296. 294. 294. 293. 293. 292.
AFV=   30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
AFVR=  30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
HLHI=  982.  982.  982.  982.  982.  982. 1018. 1055. 1092. 1128. 1165. 1201.
      1238. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275.


JYR=75 IMO= 5 JDAY=151
ISTAR=  4    4    4    4    4    4    4    3    2    2    1    1    1    1    1    3    2    3    4    4    3    4    4    4
AWS=  3.6  2.2  3.1  4.0  4.0  5.4  5.8  5.8  7.2  6.7  8.1  8.1  8.5  8.9  9.4  5.8  4.9  3.6  4.0  3.6  5.4  4.5  4.5  5.4
TEMP= 291. 291. 291. 290. 290. 290. 290. 293. 295. 295. 297. 297. 298. 299. 299. 297. 297. 297. 296. 295. 294. 292. 292. 291.
AFV=   23.  22.  29.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
AFVR=  23.  22.  29.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
HLHI=  863.  863.  863.  863.  863.  863.  911.  960. 1008. 1057. 1105. 1153.
      1202. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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JYR=75 IHO= 6 JDAY=166
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    2    3    4    4    3    4
AWS=  1.9  1.8  1.8  0.9  0.9  2.7  3.1  1.8  1.3  3.6  4.5  6.7  8.5  8.5  9.4  8.9  9.4  7.2  7.2  7.2  7.6  7.2  8.5  6.3
TEMP= 289. 287. 287. 287. 286. 286. 288. 290. 294. 297. 300. 301. 301. 302. 301. 301. 301. 300. 299. 298. 296. 296. 294. 290.
AFV=  352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
AFVR= 352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
HLH1=  356.  356.  356.  356.  356.  356.  515.  673.  832.  990. 1149. 1308.
      1466. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625.


JYR=75 IHO= 6 JDAY=173
ISTAB=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  0.4  2.2  2.2  2.2  1.3  0.0  0.0  0.9  1.3  2.2  2.7  2.2  3.1  2.7  2.2  1.3  3.1  3.6  2.2  3.1  3.6  3.1  3.1  2.7
TEMP= 288. 287. 287. 286. 286. 286. 288. 292. 295. 297. 299. 301. 302. 302. 302. 304. 303. 300. 299. 296. 295. 294. 294. 292.
AFV=  211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
AFVR= 211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
HLH1=  340.  340.  340.  340.  340.  340.  458.  577.  695.  814.  932. 1051.
      1169. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288.


JYR=75 IHO= 7 JDAY=189
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  1.3  1.3  1.3  1.8  1.8  1.8  0.4  2.7  1.8  1.3  1.3  2.7  2.7  2.7  3.6  2.7  3.6  4.5  4.5  3.1  1.3  2.7  2.2  3.1
TEMP= 289. 289. 288. 288. 288. 288. 288. 290. 291. 294. 298. 300. 302. 303. 301. 300. 301. 299. 297. 296. 295. 294. 294. 293.
AFV=  342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
AFVR= 342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
HLH1=  609.  609.  609.  609.  609.  609.  750.  890. 1031. 1171. 1312. 1453.
      1593. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734.


JYR=75 IHO= 7 JDAY=191
ISTAB=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    2    3    3    4    4    4
AWS=  1.3  1.8  0.9  1.3  0.9  1.3  2.2  0.4  0.4  1.3  2.2  2.2  2.7  4.0  2.7  4.0  3.1  4.5  5.4  1.0  1.0  1.0  1.3  2.7
TEMP= 289. 287. 286. 285. 285. 284. 287. 290. 293. 296. 297. 297. 298. 299. 301. 301. 283. 283. 283. 283. 283. 283. 287. 287.
AFV=   19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
AFVR=  19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
HLH1=  542.  542.  542.  542.  542.  542.  716.  890. 1065. 1239. 1413. 1588.
      1762. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936.


JYR=75 IHO= 7 JDAY=195
ISTAB=  3    3    4    4    4    4    4    3    1    1    1    1    1    1    1    3    1    1    3    4    4    4    4    4    4
AWS=  2.7  2.2  2.7  2.7  1.8  1.3  1.3  1.3  1.3  2.7  3.6  3.6  3.6  3.1  3.6  4.0  3.6  3.6  3.1  2.7  1.8  0.4  0.9  2.2
TEMP= 291. 290. 290. 290. 290. 290. 290. 291. 292. 293. 296. 297. 299. 299. 299. 299. 297. 297. 294. 292. 292. 292. 291. 291. 291.
AFV=  323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
AFVR= 323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
HLH1=  660.  660.  660.  660.  660.  660.  743.  827.  910.  994. 1077. 1160.
      1244. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IHO= 7 JDAY=197
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.1  4.0  2.2  0.4  0.0  0.0  0.4  0.4  1.3  2.7  2.7  3.6  2.7  2.7  2.2  2.2  3.1  3.1  3.1  3.1  0.9  2.2  1.8  0.9
TEMP= 291. 291. 291. 291. 291. 291. 291. 292. 294. 296. 299. 299. 298. 301. 301. 301. 300. 299. 297. 295. 295. 294. 293. 292.
AFV=  259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
AFVR= 259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
HLH1=  640.  640.  640.  640.  640.  640.  832. 1024. 1216. 1408. 1600. 1793.
      1985. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177.
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JYR=75 IMO= 8 JDAY=230
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  4.0  3.6  4.9  4.9  4.5  5.4  4.5  3.6  4.0  5.4  5.8  5.4  5.8  6.3  7.2  6.3  6.3  5.8  6.3  6.7  7.6  6.7  3.1  3.6
TEMP= 290. 290. 289. 289. 289. 290. 291. 292. 293. 294. 295. 296. 296. 297. 297. 297. 298. 297. 295. 292. 291. 290. 289. 288.
AFV=   40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 110. 106. 109. 116. 129. 145. 148. 130. 145.
AFVR=  40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 110. 106. 109. 116. 129. 145. 148. 130. 145.
HLHI=  967.  967.  967.  967.  967.  967. 1073. 1179. 1284. 1390. 1496. 1601.
      1707. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1913.


JYR=75 IMO= 8 JDAY=237
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    2    2    3    4    4    4    4    4
AWS=  7.6  5.8  4.5  4.0  4.9  4.9  4.5  4.0  4.5  4.0  4.0  5.8  5.4  6.7  8.1  8.5  8.5  7.6  7.2  6.3  4.9  4.5  4.9  4.0
TEMP= 295. 294. 294. 293. 293. 292. 293. 294. 296. 297. 299. 300. 301. 302. 301. 302. 301. 301. 299. 298. 296. 295. 294. 293.
AFV=   47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
AFVR=  47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
HLHI=  501.  501.  501.  501.  501.  501.  538.  574.  611.  648.  684.  721.
       758.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.


JYR=75 IMO= 8 JDAY=239
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  6.3  5.4  4.5  3.6  2.7  3.6  4.0  3.1  2.2  3.6  4.9  6.7  8.1  7.6  6.3  7.2  6.3  5.4  6.7  7.2  6.3  4.9  4.9  3.6
TEMP= 290. 290. 289. 288. 288. 287. 287. 288. 290. 294. 296. 297. 298. 298. 299. 299. 299. 299. 296. 293. 291. 289. 287. 286.
AFV=  114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
AFVR= 114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
HLHI=  439.  439.  439.  439.  439.  439.  544.  649.  754.  859.  965. 1070.
      1175. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280.


JYR=75 IMO= 9 JDAY=247
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    2    4    4    4    4    4    4
AWS=  0.4  0.4  1.3  2.7  3.1  4.5  4.0  4.0  5.4  6.7  6.7  6.7  6.7  7.2  8.1  7.2  7.2  8.5  6.3  5.4  4.0  4.9  6.3  4.5
TEMP= 286. 286. 286. 286. 286. 287. 287. 288. 290. 291. 293. 294. 295. 296. 295. 295. 295. 294. 291. 290. 288. 288. 286. 285.
AFV=   47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
AFVR=  47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
HLHI=   35.   35.   35.   35.   35.   35.  172.  308.  445.  581.  718.  855.
       991. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128.

YEAR BASED ON  20. DAYS
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PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

MAXIMUM MEAN CONC= 7.9099E-05 DIRECTION= 36 DISTANCE= 1.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.9 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	5.25236E-05	5.59424E-05	4.73181E-05	4.12272E-05	3.81081E-05
2	4.82694E-05	4.83969E-05	4.19561E-05	3.82319E-05	3.67267E-05
3	4.66828E-05	4.52495E-05	4.08063E-05	3.80642E-05	3.64025E-05
4	4.53577E-05	4.33629E-05	3.97108E-05	3.71673E-05	3.55875E-05
5	4.06066E-05	3.91976E-05	3.72388E-05	3.57322E-05	3.51498E-05
6	3.63864E-05	3.57396E-05	3.50654E-05	3.45074E-05	3.44741E-05
7	3.56715E-05	3.50330E-05	3.47239E-05	3.44050E-05	3.42029E-05
8	3.90687E-05	3.68762E-05	3.56609E-05	3.53970E-05	3.48335E-05
9	4.79590E-05	4.26866E-05	3.85538E-05	3.62768E-05	3.50703E-05
10	6.16071E-05	5.46053E-05	5.07867E-05	4.51633E-05	3.96313E-05
11	7.14022E-05	5.77687E-05	4.52817E-05	3.98448E-05	3.72068E-05
12	6.91414E-05	5.48574E-05	4.36055E-05	3.89096E-05	3.64432E-05
13	6.00994E-05	4.96097E-05	4.06223E-05	3.64779E-05	3.50618E-05
14	5.15337E-05	4.46183E-05	3.96097E-05	3.78102E-05	3.61537E-05
15	4.53210E-05	4.08912E-05	3.71518E-05	3.56499E-05	3.48537E-05
16	3.98996E-05	3.73956E-05	3.52527E-05	3.44717E-05	3.42218E-05
17	3.61403E-05	3.51280E-05	3.43764E-05	3.41360E-05	3.40602E-05
18	3.46472E-05	3.45045E-05	3.44973E-05	3.45704E-05	3.43441E-05
19	3.43827E-05	3.46890E-05	3.44751E-05	3.41943E-05	3.40922E-05
20	3.41490E-05	3.42603E-05	3.41499E-05	3.40483E-05	3.40171E-05
21	3.40144E-05	3.40156E-05	3.40050E-05	3.40008E-05	3.40001E-05
22	3.40006E-05	3.40003E-05	3.40024E-05	3.40018E-05	3.40003E-05
23	3.40050E-05	3.40032E-05	3.40745E-05	3.41144E-05	3.40520E-05
24	3.40579E-05	3.40732E-05	3.40774E-05	3.60137E-05	3.58935E-05
25	3.43591E-05	3.47900E-05	3.82200E-05	4.02026E-05	3.82123E-05
26	3.49015E-05	3.52621E-05	3.61766E-05	3.63130E-05	3.56687E-05
27	3.51634E-05	3.50325E-05	3.48574E-05	3.47066E-05	3.46813E-05
28	3.56874E-05	3.50910E-05	3.44474E-05	3.41978E-05	3.40958E-05
29	3.80929E-05	3.62919E-05	3.48235E-05	3.44420E-05	3.48172E-05
30	4.34436E-05	3.94630E-05	3.60267E-05	3.47194E-05	3.43329E-05
31	4.79304E-05	4.27354E-05	3.75602E-05	3.53267E-05	3.46505E-05
32	4.64249E-05	4.22509E-05	3.75853E-05	3.55291E-05	3.51428E-05
33	4.20193E-05	4.01302E-05	3.77972E-05	3.67355E-05	3.55839E-05
34	4.03057E-05	3.99246E-05	3.72139E-05	3.53240E-05	3.46071E-05
35	4.21214E-05	4.21018E-05	3.84671E-05	3.63746E-05	3.53474E-05
36	7.38701E-05	7.90994E-05	5.83402E-05	4.52158E-05	3.99081E-05

PENN. ELECTRIC CO. SHANVILLE

NON--SO2

YEARLY MAXIMUM 24-HOUR CONC= 2.3048E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.0374E-04 (150)	1.1602E-04 (197)	9.0512E-05 (173)	6.9076E-05 (173)	5.5556E-05 (173)
2	1.2427E-04 (237)	9.7205E-05 (237)	6.4963E-05 (197)	5.2459E-05 (197)	4.7183E-05 (197)
3	1.5193E-04 (237)	1.2071E-04 (237)	8.2544E-05 (237)	6.6936E-05 (237)	5.5618E-05 (237)
4	1.4219E-04 (151)	1.1195E-04 (151)	8.0329E-05 (237)	6.1614E-05 (237)	4.8335E-05 (237)
5	1.1273E-04 (151)	8.6503E-05 (151)	5.6617E-05 (151)	4.3401E-05 (166)	4.1495E-05 (239)
6	6.2500E-05 (151)	4.9363E-05 (151)	4.0097E-05 (189)	3.8266E-05 (189)	3.9953E-05 (148)
7	4.6116E-05 (148)	4.0891E-05 (148)	4.2884E-05 (189)	4.0645E-05 (189)	3.7563E-05 (189)
8	7.4214E-05 (230)	5.9313E-05 (148)	4.3191E-05 (111)	5.2427E-05 (111)	4.8370E-05 (111)
9	1.3152E-04 (230)	9.1557E-05 (230)	5.6169E-05 (230)	4.8828E-05 (94)	4.1376E-05 (94)
10	1.7949E-04 (230)	1.2865E-04 (230)	2.0962E-04 (94)	1.7816E-04 (94)	1.0317E-04 (94)
11	1.7489E-04 (111)	1.1883E-04 (230)	8.1885E-05 (247)	7.1285E-05 (247)	5.8081E-05 (247)
12	1.7736E-04 (111)	1.1735E-04 (111)	7.7802E-05 (111)	6.3284E-05 (111)	4.9769E-05 (111)
13	1.4917E-04 (103)	1.0469E-04 (103)	6.4155E-05 (103)	4.6870E-05 (136)	4.0323E-05 (136)
14	1.5601E-04 (122)	1.0577E-04 (136)	7.8557E-05 (122)	6.8741E-05 (122)	5.3072E-05 (122)
15	1.4188E-04 (122)	9.7528E-05 (122)	6.1555E-05 (122)	4.5378E-05 (148)	4.0722E-05 (148)
16	9.1877E-05 (122)	6.9543E-05 (136)	4.7592E-05 (136)	3.9861E-05 (136)	3.6906E-05 (136)
17	5.8604E-05 (136)	4.8747E-05 (136)	3.9311E-05 (136)	3.6123E-05 (136)	3.4976E-05 (136)
18	4.3684E-05 (136)	4.2961E-05 (136)	4.3691E-05 (136)	4.5353E-05 (136)	4.0865E-05 (136)
19	4.1375E-05 (136)	4.7693E-05 (136)	4.3487E-05 (136)	3.7885E-05 (136)	3.5844E-05 (136)
20	3.6961E-05 (136)	3.9204E-05 (136)	3.6998E-05 (136)	3.4966E-05 (136)	3.4343E-05 (136)
21	3.4287E-05 (136)	3.4312E-05 (136)	3.4099E-05 (136)	3.4015E-05 (136)	3.4002E-05 (136)
22	3.4006E-05 (136)	3.4003E-05 (136)	3.4047E-05 (166)	3.4036E-05 (166)	3.4007E-05 (166)
23	3.4100E-05 (137)	3.4041E-05 (137)	3.5418E-05 (166)	3.6262E-05 (166)	3.5038E-05 (166)
24	3.5150E-05 (137)	3.4981E-05 (137)	4.1715E-05 (73)	5.5456E-05 (73)	5.9310E-05 (73)
25	4.1065E-05 (137)	4.2055E-05 (73)	1.1287E-04 (73)	1.5411E-04 (73)	1.1652E-04 (73)
26	5.1219E-05 (137)	5.4726E-05 (137)	6.4296E-05 (73)	7.3491E-05 (73)	6.3766E-05 (73)
27	5.2946E-05 (137)	5.0643E-05 (137)	4.2547E-05 (137)	4.2704E-05 (73)	4.0849E-05 (166)
28	5.1641E-05 (137)	4.4722E-05 (137)	3.8412E-05 (166)	3.5968E-05 (137)	3.4956E-05 (166)
29	7.7126E-05 (166)	5.8892E-05 (166)	4.3448E-05 (166)	3.7867E-05 (166)	4.7502E-05 (195)
30	1.2681E-04 (166)	8.5645E-05 (137)	5.3516E-05 (137)	4.1188E-05 (137)	3.7341E-05 (137)
31	1.6792E-04 (166)	1.1733E-04 (137)	6.9332E-05 (137)	4.8032E-05 (137)	4.0848E-05 (137)
32	1.5207E-04 (166)	1.0218E-04 (166)	6.0597E-05 (166)	4.3279E-05 (166)	4.3873E-05 (195)
33	9.1235E-05 (166)	6.5530E-05 (166)	5.3012E-05 (166)	4.7544E-05 (166)	4.2454E-05 (137)
34	7.7150E-05 (150)	7.4505E-05 (150)	5.6605E-05 (150)	4.3289E-05 (150)	3.8247E-05 (150)
35	8.6113E-05 (150)	7.2150E-05 (150)	5.0916E-05 (197)	4.6242E-05 (150)	4.4645E-05 (150)
36	2.3048E-04 (150)	2.0322E-04 (195)	1.3284E-04 (195)	8.5799E-05 (195)	6.0951E-05 (150)

PENN. ELECTRIC CO. SHANVILLE

NOX--SO2

YEARLY MAXIMUM 3-HOUR CONC= 6.9960E-04 DIRECTION= 0. DISTANCE= 0.0 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.0 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	3.3388E-04 (150)	3.2679E-04 (191)	2.0162E-04 (173)	1.4439E-04 (173)	1.1856E-04 (173)
2	4.2351E-04 (237)	2.5483E-04 (197)	1.7229E-04 (197)	8.9925E-05 (197)	1.0430E-04 (189)
3	4.1446E-04 (237)	3.3328E-04 (237)	2.4064E-04 (237)	1.9112E-04 (237)	1.5297E-04 (237)
4	4.3968E-04 (151)	3.2013E-04 (237)	2.1725E-04 (237)	1.6312E-04 (237)	1.0402E-04 (237)
5	3.2886E-04 (151)	2.3712E-04 (151)	1.3457E-04 (151)	1.0921E-04 (173)	9.7158E-05 (239)
6	1.4719E-04 (151)	1.0866E-04 (151)	8.2777E-05 (189)	6.8126E-05 (189)	8.1515E-05 (148)
7	1.1514E-04 (148)	7.9462E-05 (148)	1.0507E-04 (189)	8.7163E-05 (189)	6.2501E-05 (189)
8	2.6207E-04 (148)	1.7973E-04 (148)	1.0402E-04 (111)	1.8092E-04 (111)	1.3285E-04 (111)
9	3.9136E-04 (148)	2.7643E-04 (148)	1.6966E-04 (94)	1.5177E-04 (94)	9.2975E-05 (94)
10	4.5446E-04 (238)	2.9770E-04 (148)	2.3878E-04 (94)	2.2948E-04 (94)	1.3526E-04 (94)
11	4.6072E-04 (239)	2.8325E-04 (247)	1.6611E-04 (247)	1.6772E-04 (247)	1.3576E-04 (247)
12	4.5006E-04 (239)	2.6408E-04 (239)	1.6040E-04 (111)	1.3989E-04 (111)	9.1936E-05 (111)
13	3.9522E-04 (103)	2.8242E-04 (136)	1.7200E-04 (136)	9.3234E-05 (136)	6.2711E-05 (136)
14	4.1093E-04 (122)	2.7404E-04 (136)	1.6462E-04 (122)	1.7669E-04 (122)	1.1257E-04 (122)
15	4.0574E-04 (122)	2.5096E-04 (136)	1.2401E-04 (122)	1.2501E-04 (148)	8.7771E-05 (148)
16	2.9807E-04 (136)	2.0969E-04 (136)	1.0345E-04 (136)	6.5071E-05 (136)	4.9856E-05 (136)
17	1.7454E-04 (136)	1.2122E-04 (136)	6.6630E-05 (136)	4.7717E-05 (136)	4.0568E-05 (136)
18	1.0139E-04 (136)	9.9890E-05 (136)	1.0948E-04 (136)	1.2426E-04 (136)	8.8752E-05 (136)
19	9.1651E-05 (136)	1.4321E-04 (136)	1.0978E-04 (136)	6.5055E-05 (136)	4.8746E-05 (136)
20	5.7646E-05 (136)	7.5618E-05 (136)	5.7982E-05 (136)	4.1727E-05 (136)	3.6742E-05 (136)
21	3.6298E-05 (136)	3.6497E-05 (136)	3.4790E-05 (136)	3.4122E-05 (136)	3.4018E-05 (136)
22	3.4048E-05 (136)	3.4023E-05 (136)	3.4374E-05 (166)	3.4266E-05 (166)	3.4054E-05 (166)
23	3.4801E-05 (137)	3.4330E-05 (137)	4.5341E-05 (166)	5.2094E-05 (166)	4.2300E-05 (166)
24	4.3203E-05 (137)	4.1207E-05 (137)	8.2975E-05 (73)	1.3254E-04 (73)	1.9335E-04 (73)
25	9.0519E-05 (137)	9.5535E-05 (137)	2.2081E-04 (73)	2.4915E-04 (73)	2.2455E-04 (73)
26	1.7167E-04 (137)	1.9976E-04 (137)	1.5877E-04 (73)	1.7023E-04 (73)	1.2079E-04 (73)
27	1.8127E-04 (137)	1.6586E-04 (137)	1.0215E-04 (131)	1.0344E-04 (71)	8.8787E-05 (166)
28	1.4038E-04 (137)	1.0632E-04 (166)	6.6574E-05 (166)	4.9053E-05 (166)	4.1501E-05 (166)
29	1.9487E-04 (166)	1.5464E-04 (166)	8.8147E-05 (166)	5.9473E-05 (166)	1.1267E-04 (195)
30	1.4088E-04 (137)	2.0994E-04 (137)	9.9071E-05 (137)	6.1135E-05 (137)	4.7536E-05 (137)
31	4.5624E-04 (137)	2.8769E-04 (137)	1.5970E-04 (137)	8.1525E-05 (137)	5.6900E-05 (137)
32	3.7780E-04 (137)	2.3790E-04 (166)	1.2665E-04 (166)	6.6097E-05 (166)	1.1283E-04 (195)
33	2.5526E-04 (150)	2.2793E-04 (150)	1.3323E-04 (150)	1.2231E-04 (166)	9.3766E-05 (137)
34	3.2939E-04 (150)	2.7784E-04 (150)	1.8560E-04 (150)	9.7921E-05 (150)	6.3052E-05 (150)
35	3.0450E-04 (150)	2.3143E-04 (195)	1.3460E-04 (197)	1.1375E-04 (137)	1.0347E-04 (150)
36	6.9960E-04 (150)	5.4183E-04 (195)	3.3252E-04 (173)	1.8434E-04 (173)	1.1715E-04 (195)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	2.3048E-04	36	0.83
94	2.0967E-04	10	3.32
195	2.0322E-04	36	1.66
173	1.8668E-04	36	1.66
230	1.7949E-04	10	0.83
197	1.7880E-04	36	1.66
191	1.7851E-04	36	1.66
111	1.7736E-04	12	0.83
189	1.7498E-04	36	1.66
103	1.7396E-04	12	0.83
166	1.6792E-04	31	0.83
247	1.6783E-04	11	0.83
239	1.6003E-04	11	0.83
137	1.5894E-04	31	0.83
122	1.5601E-04	14	0.83
73	1.5411E-04	25	8.65
237	1.5193E-04	3	0.83
151	1.4219E-04	4	0.83
136	1.3857E-04	14	0.83
148	1.3592E-04	10	0.83

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PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

SEWARD PLANT 1975

&NAM1
KSTL=4  IOK=1  TRAP,IPUN= 2 0
  IDATA,IMAX,ILOPS= 0 0 0
IOHGT= 2    HGT= 91.0   MST= 1
NPOL= 2    JTAR= 1    INPUT= 2
NSEA= 1    ECONV=    0.3048006    SYTF= 1.0    FIV= 3.0    TAF= 8.55    RACFCR=      85.0

DAY--  1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1120.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1085.0	1340.0	1200.0	1350.0	1600.0
2	1090.0	1150.0	1370.0	1500.0	1500.0
3	1100.0	1200.0	1250.0	1400.0	1500.0
4	1115.0	1120.0	1400.0	1440.0	1450.0
5	1120.0	1100.0	1250.0	1420.0	1550.0
6	1130.0	1240.0	1140.0	1440.0	1500.0
7	1140.0	1300.0	1100.0	1300.0	1720.0
8	1135.0	1280.0	1400.0	1150.0	1720.0
9	1150.0	1240.0	1350.0	1490.0	1950.0
10	1145.0	1240.0	1450.0	1800.0	2100.0
11	1135.0	1250.0	1500.0	1950.0	1800.0
12	1120.0	1210.0	1560.0	2100.0	2460.0
13	1120.0	1260.0	1500.0	2100.0	2560.0
14	1120.0	1220.0	1500.0	2000.0	2500.0
15	1120.0	1220.0	1400.0	1850.0	2530.0
16	1100.0	1280.0	1350.0	1700.0	2450.0
17	1100.0	1210.0	1450.0	1640.0	2200.0
18	1100.0	1140.0	1350.0	1620.0	1900.0
19	1070.0	1100.0	1200.0	1600.0	1400.0
20	1080.0	1080.0	1100.0	1540.0	1300.0
21	1240.0	1080.0	1080.0	1300.0	1210.0
22	1210.0	1090.0	1080.0	1080.0	1210.0
23	1270.0	1230.0	1150.0	1080.0	1400.0
24	1420.0	1250.0	1200.0	1200.0	1060.0
25	1485.0	1350.0	1240.0	1300.0	1400.0
26	1500.0	1470.0	1300.0	1400.0	1350.0
27	1420.0	1560.0	1470.0	1460.0	1570.0
28	1310.0	1540.0	1540.0	1400.0	1660.0
29	1440.0	1400.0	1490.0	1550.0	1660.0
30	1550.0	1320.0	1400.0	1600.0	1710.0
31	1550.0	1300.0	1540.0	1620.0	1770.0
32	1560.0	1330.0	1400.0	1700.0	1750.0
33	1530.0	1550.0	1550.0	1800.0	1700.0
34	1400.0	1400.0	1680.0	1550.0	1600.0
35	1250.0	1330.0	1300.0	1580.0	1620.0
36	1180.0	1200.0	1350.0	1350.0	1620.0

STACK # 1--SEWARD STACK 1 - 1975
STACK # 2--SEWARD STACK 2 - 1975

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NON	280.40	0.00	68.60	2.40	31.30	449.00	141.60
2	NON	616.40	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.03 0.93 0.99 1.10 1.03 0.99 1.13 1.09 1.10 0.92 0.87 0.81

YEAR BASED ON 365. DAYS

PENN. ELEC. SEWARD

NOM--SO2

MAXIMUM MEAN CONC= 6.3818E-05 DIRECTION= 8 DISTANCE= 3.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	4.72068E-05	4.76286E-05	4.78311E-05	4.78833E-05	4.76788E-05
2	4.76136E-05	4.79345E-05	4.80655E-05	4.81047E-05	4.79416E-05
3	4.91913E-05	5.02252E-05	5.05958E-05	5.06348E-05	5.01479E-05
4	5.15097E-05	5.35949E-05	5.44605E-05	5.46521E-05	5.37911E-05
5	5.12280E-05	5.84172E-05	6.00678E-05	6.02891E-05	5.84928E-05
6	5.43000E-05	5.61516E-05	5.71062E-05	5.73450E-05	5.62447E-05
7	5.39855E-05	5.80509E-05	6.03310E-05	6.14209E-05	6.05055E-05
8	5.35910E-05	5.91689E-05	6.22917E-05	6.38177E-05	6.29004E-05
9	5.25510E-05	5.54426E-05	5.79477E-05	5.96948E-05	5.96196E-05
10	5.45658E-05	5.70963E-05	5.89253E-05	5.98352E-05	5.89575E-05
11	5.62979E-05	5.82612E-05	5.95488E-05	5.99040E-05	5.83672E-05
12	5.45420E-05	5.47119E-05	5.50119E-05	5.49576E-05	5.41067E-05
13	5.06661E-05	5.04980E-05	5.06704E-05	5.07206E-05	5.04007E-05
14	4.80143E-05	4.80760E-05	4.81594E-05	4.82183E-05	4.80767E-05
15	4.69390E-05	4.70688E-05	4.70566E-05	4.71334E-05	4.72074E-05
16	4.65580E-05	4.66875E-05	4.66318E-05	4.66353E-05	4.66454E-05
17	4.62916E-05	4.63415E-05	4.63121E-05	4.63499E-05	4.63818E-05
18	4.60655E-05	4.62192E-05	4.61802E-05	4.61390E-05	4.60594E-05
19	4.59050E-05	4.61958E-05	4.61757E-05	4.60644E-05	4.58528E-05
20	4.57699E-05	4.61325E-05	4.61961E-05	4.61777E-05	4.60866E-05
21	4.56396E-05	4.61020E-05	4.62359E-05	4.62553E-05	4.61477E-05
22	4.54865E-05	4.59778E-05	4.61633E-05	4.62971E-05	4.63354E-05
23	4.54793E-05	4.60372E-05	4.61659E-05	4.61495E-05	4.60029E-05
24	4.56355E-05	4.61949E-05	4.63190E-05	4.63431E-05	4.62900E-05
25	4.59338E-05	4.66689E-05	4.67901E-05	4.67466E-05	4.65812E-05
26	4.61056E-05	4.65149E-05	4.64998E-05	4.64062E-05	4.62609E-05
27	4.66776E-05	4.69099E-05	4.67300E-05	4.66292E-05	4.64302E-05
28	4.76676E-05	4.73823E-05	4.71560E-05	4.70739E-05	4.71105E-05
29	4.89310E-05	4.86630E-05	4.87536E-05	4.89821E-05	4.90963E-05
30	5.02695E-05	5.05044E-05	5.04542E-05	5.01593E-05	4.94622E-05
31	5.12155E-05	5.35608E-05	5.40066E-05	5.36742E-05	5.24591E-05
32	5.02087E-05	5.38326E-05	5.49181E-05	5.49387E-05	5.37749E-05
33	4.78234E-05	4.92464E-05	4.95887E-05	4.95023E-05	4.89657E-05
34	4.66773E-05	4.73182E-05	4.76003E-05	4.77543E-05	4.76719E-05
35	4.66708E-05	4.67250E-05	4.67570E-05	4.67598E-05	4.66337E-05
36	4.81592E-05	4.84217E-05	4.83430E-05	4.80718E-05	4.75240E-05

PERM, ELEC, SEWARD

NOX--SO2

YEARLY MAXIMUM 24-HOUR CONC= 3.4954E-04 DIRECTION=300. DISTANCE= 2.8 KM DAY=120.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.9 KM	3.7 KM	5.2 KM
1	1.3447E-04 (200)	1.3165E-04 (199)	1.5569E-04 (254)	1.8564E-04 (254)	1.9210E-04 (254)
2	1.2765E-04 (113)	1.0369E-04 (164)	1.0893E-04 (164)	1.0423E-04 (164)	9.8563E-05 (167)
3	1.6533E-04 (208)	1.4723E-04 (349)	1.5248E-04 (349)	1.4913E-04 (263)	1.4245E-04 (263)
4	2.1024E-04 (208)	2.0636E-04 (156)	2.3279E-04 (156)	2.3216E-04 (306)	2.1711E-04 (306)
5	1.9172E-04 (208)	2.0713E-04 (56)	3.1364E-04 (56)	2.9467E-04 (56)	2.1674E-04 (56)
6	1.8774E-04 (189)	1.9242E-04 (34)	2.1038E-04 (332)	2.2466E-04 (332)	2.1150E-04 (332)
7	1.8311E-04 (189)	2.3340E-04 (26)	2.4655E-04 (26)	2.4545E-04 (308)	2.3207E-04 (309)
8	2.0206E-04 (58)	3.2086E-04 (57)	3.2216E-04 (57)	2.8506E-04 (57)	2.5824E-04 (7)
9	2.1516E-04 (183)	1.8274E-04 (9)	2.0404E-04 (9)	1.9458E-04 (9)	1.9360E-04 (124)
10	2.5058E-04 (111)	2.4407E-04 (62)	2.9250E-04 (62)	2.9449E-04 (62)	2.4881E-04 (62)
11	2.6004E-04 (96)	2.5301E-04 (94)	2.7598E-04 (94)	2.8082E-04 (96)	2.5121E-04 (96)
12	2.6570E-04 (103)	2.1087E-04 (79)	2.2018E-04 (275)	2.2550E-04 (275)	1.9705E-04 (275)
13	2.0424E-04 (103)	1.9341E-04 (67)	2.1615E-04 (67)	2.0630E-04 (67)	1.6913E-04 (67)
14	1.7261E-04 (117)	1.3929E-04 (195)	1.3372E-04 (303)	1.3477E-04 (303)	1.2139E-04 (303)
15	1.5400E-04 (219)	1.2438E-04 (219)	1.1141E-04 (220)	1.1404E-04 (86)	1.2584E-04 (86)
16	1.5245E-04 (219)	1.3582E-04 (186)	1.1773E-04 (186)	1.1459E-04 (20)	1.3898E-04 (19)
17	1.5689E-04 (180)	1.4427E-04 (186)	1.2407E-04 (186)	1.0097E-04 (186)	1.0612E-04 (218)
18	1.7420E-04 (180)	1.4962E-04 (180)	1.2319E-04 (180)	1.0008E-04 (180)	9.3201E-05 (210)
19	1.5172E-04 (180)	1.3043E-04 (180)	1.0799E-04 (180)	1.1119E-04 (218)	1.1507E-04 (218)
20	1.1364E-04 (180)	1.1582E-04 (181)	1.0214E-04 (179)	9.4986E-05 (179)	8.9688E-05 (160)
21	1.1072E-04 (181)	1.1423E-04 (181)	1.3188E-04 (218)	1.3018E-04 (218)	1.1652E-04 (218)
22	9.5944E-05 (181)	1.2595E-04 (181)	1.2009E-04 (181)	1.2806E-04 (159)	1.3483E-04 (159)
23	7.9446E-05 (191)	1.1319E-04 (181)	1.1304E-04 (267)	1.1578E-04 (267)	1.0407E-04 (267)
24	8.3769E-05 (179)	1.1447E-04 (267)	1.3493E-04 (267)	1.3284E-04 (267)	1.1484E-04 (267)
25	1.0033E-04 (179)	2.1664E-04 (267)	2.5539E-04 (267)	2.5120E-04 (267)	2.1107E-04 (267)
26	1.0097E-04 (179)	1.1578E-04 (179)	1.1821E-04 (267)	1.1601E-04 (267)	1.0196E-04 (267)
27	1.2393E-04 (187)	1.3981E-04 (73)	1.5133E-04 (73)	1.4325E-04 (73)	1.1943E-04 (73)
28	2.2074E-04 (187)	1.4517E-04 (187)	1.2887E-04 (73)	1.1511E-04 (73)	1.0486E-04 (119)
29	2.7746E-04 (187)	2.0215E-04 (187)	2.4150E-04 (177)	3.1194E-04 (177)	3.2945E-04 (177)
30	2.9528E-04 (120)	3.3915E-04 (120)	3.4954E-04 (120)	3.2183E-04 (120)	2.5583E-04 (120)
31	2.3559E-04 (194)	3.2109E-04 (261)	3.4829E-04 (261)	3.2054E-04 (261)	2.5160E-04 (261)
32	2.2435E-04 (77)	2.8429E-04 (77)	2.7771E-04 (77)	2.7943E-04 (137)	2.4164E-04 (137)
33	1.4493E-04 (112)	1.5896E-04 (6)	1.7851E-04 (6)	1.7194E-04 (6)	1.4341E-04 (6)
34	1.3558E-04 (112)	1.1908E-04 (112)	1.0474E-04 (325)	1.0457E-04 (311)	9.9504E-05 (311)
35	1.7033E-04 (200)	1.2574E-04 (200)	1.1018E-04 (200)	1.1616E-04 (201)	1.1154E-04 (201)
36	2.3356E-04 (200)	2.1514E-04 (200)	2.5137E-04 (200)	2.3656E-04 (200)	1.9482E-04 (200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 8.9649E-04 DIRECTION= 60. DISTANCE= 2.8 KM DAY= 39. HOUR= 300.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	5.2068E-04 (195)	4.2305E-04 (204)	4.4779E-04 (254)	5.8021E-04 (254)	5.8785E-04 (254)
2	5.3245E-04 (239)	3.6921E-04 (113)	3.5461E-04 (113)	3.8358E-04 (83)	3.9797E-04 (205)
3	6.8223E-04 (239)	4.9223E-04 (191)	5.5922E-04 (312)	6.1489E-04 (312)	5.9885E-04 (241)
4	6.3652E-04 (205)	5.4912E-04 (156)	6.1161E-04 (156)	5.8412E-04 (156)	5.9805E-04 (114)
5	9.1154E-04 (237)	5.9269E-04 (3)	8.0109E-04 (3)	8.6833E-04 (3)	7.6979E-04 (3)
6	7.6564E-04 (110)	8.1247E-04 (39)	8.9649E-04 (39)	8.2899E-04 (39)	6.6190E-04 (39)
7	7.1736E-04 (154)	5.6445E-04 (26)	6.4877E-04 (234)	7.0272E-04 (309)	7.2068E-04 (42)
8	6.3964E-04 (58)	6.1252E-04 (93)	5.9149E-04 (19)	6.1170E-04 (234)	5.7584E-04 (234)
9	6.3903E-04 (183)	5.4028E-04 (9)	5.9822E-04 (9)	6.2995E-04 (245)	6.4170E-04 (42)
10	6.5379E-04 (91)	6.1096E-04 (93)	6.0454E-04 (94)	6.1217E-04 (256)	5.7264E-04 (229)
11	7.3541E-04 (97)	6.0334E-04 (93)	6.9253E-04 (81)	7.4269E-04 (81)	6.6622E-04 (81)
12	6.3749E-04 (95)	5.4586E-04 (79)	6.0528E-04 (126)	5.6851E-04 (126)	5.2545E-04 (98)
13	6.4419E-04 (303)	4.8860E-04 (67)	5.5154E-04 (67)	5.2415E-04 (284)	5.5484E-04 (206)
14	4.9454E-04 (117)	5.0543E-04 (185)	4.3851E-04 (185)	4.9060E-04 (302)	4.6520E-04 (302)
15	6.0130E-04 (219)	4.7115E-04 (210)	4.4985E-04 (210)	3.7333E-04 (210)	4.1754E-04 (20)
16	5.4427E-04 (220)	4.2399E-04 (186)	3.6409E-04 (186)	4.2372E-04 (20)	4.7661E-04 (20)
17	5.4928E-04 (180)	4.4693E-04 (186)	3.5424E-04 (186)	3.7867E-04 (218)	3.9068E-04 (218)
18	4.9132E-04 (180)	4.0027E-04 (186)	3.6694E-04 (210)	3.4137E-04 (210)	2.9265E-04 (92)
19	4.9515E-04 (180)	3.8016E-04 (180)	2.9916E-04 (182)	3.6531E-04 (218)	3.8795E-04 (218)
20	4.6721E-04 (218)	3.9689E-04 (181)	3.1582E-04 (181)	2.7968E-04 (179)	3.2731E-04 (219)
21	5.5875E-04 (218)	4.9990E-04 (219)	4.3144E-04 (218)	3.5610E-04 (218)	3.2900E-04 (73)
22	3.1300E-04 (218)	2.8395E-04 (181)	3.1040E-04 (128)	2.9823E-04 (128)	3.5233E-04 (217)
23	2.1533E-04 (196)	3.4312E-04 (181)	3.8543E-04 (267)	4.2180E-04 (267)	3.8323E-04 (218)
24	2.6839E-04 (130)	3.4448E-04 (267)	4.2676E-04 (267)	4.2774E-04 (267)	3.7845E-04 (266)
25	3.3313E-04 (130)	5.1527E-04 (267)	6.2874E-04 (267)	6.2040E-04 (267)	5.2517E-04 (267)
26	3.8617E-04 (130)	3.8959E-04 (179)	4.2915E-04 (267)	4.1449E-04 (267)	3.4275E-04 (267)
27	5.1382E-04 (187)	5.1406E-04 (73)	5.5513E-04 (73)	5.2259E-04 (73)	4.5227E-04 (87)
28	7.0334E-04 (187)	5.5331E-04 (73)	5.4020E-04 (73)	4.6127E-04 (73)	3.7233E-04 (119)
29	6.4298E-04 (187)	4.3470E-04 (188)	4.6052E-04 (177)	5.4797E-04 (177)	5.6751E-04 (177)
30	6.5112E-04 (120)	5.7496E-04 (120)	6.4678E-04 (120)	6.1966E-04 (120)	5.3200E-04 (137)
31	6.8430E-04 (258)	6.5825E-04 (241)	8.1994E-04 (243)	8.5051E-04 (243)	7.4240E-04 (243)
32	7.2251E-04 (258)	6.1813E-04 (244)	6.6043E-04 (261)	6.2277E-04 (261)	5.3658E-04 (258)
33	5.2813E-04 (112)	5.3181E-04 (6)	5.8523E-04 (6)	5.3318E-04 (6)	4.1602E-04 (6)
34	4.2557E-04 (112)	4.6540E-04 (325)	5.2839E-04 (325)	5.2240E-04 (311)	4.8103E-04 (311)
35	5.4998E-04 (200)	4.1672E-04 (200)	3.9579E-04 (200)	3.4907E-04 (200)	3.4159E-04 (201)
36	8.4913E-04 (201)	5.5194E-04 (200)	6.7339E-04 (200)	5.6530E-04 (200)	5.4259E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
120	1.4954E-04	10	2.75
261	1.4929E-04	11	2.75
177	1.2945E-04	29	5.23
57	1.2236E-04	9	2.75
56	1.1364E-04	5	2.75
62	2.9449E-04	10	3.65
77	2.8429E-04	32	2.07
96	2.8082E-04	11	3.65
137	2.7943E-04	32	3.65
335	2.7859E-04	8	2.75
187	2.7786E-04	29	1.17
94	2.7598E-04	11	2.75
14	2.7296E-04	8	3.65
7	2.7059E-04	9	3.65
37	2.6911E-04	8	3.65
26	2.6763E-04	9	2.75
103	2.6570E-04	12	1.17
188	2.5841E-04	29	1.17
267	2.5539E-04	25	2.75
200	2.5137E-04	36	2.75

PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

1975 DATA MAXIMUM LOAD

STACK # 1--SEWARD STACK 1 - MAXIMUM LOAD
STACK # 2--SEWARD STACK 2 - MAXIMUM LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	427.70	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	671.50	0.00	69.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 1 JDAY= 7

ISTAK=	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4
ANS=	7.6	7.6	9.4	8.5	9.4	8.5	8.5	8.1	9.4	8.9	8.9	9.4	7.2	4.0	4.0	4.5	3.6	5.4	6.3	8.1	8.1	6.3	6.3	6.3
TEMP=	273.	273.	273.	273.	273.	273.	273.	273.	273.	274.	274.	275.	276.	277.	277.	277.	277.	276.	276.	277.	277.	277.	277.	277.
AFV=	59.	71.	80.	83.	82.	84.	85.	83.	77.	82.	83.	89.	86.	82.	82.	71.	39.	5.	2.	18.	23.	26.	6.	357.
AFVH=	59.	71.	80.	83.	82.	84.	85.	83.	77.	82.	83.	89.	86.	82.	82.	71.	39.	5.	2.	18.	23.	26.	6.	357.
HGHI=	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.												
	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.												

JYR=75 IHO= 1 JDAY= 14

ISTAK=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	2	3	3	3	3	3	3	3	3
ANS=	7.6	8.9	8.1	7.6	7.6	8.1	8.9	10.3	8.9	6.7	6.7	8.5	8.5	8.5	8.1	8.1	7.6	8.1	9.4	9.4	8.5	8.1	8.9	9.4
TEMP=	260.	260.	259.	259.	259.	259.	258.	258.	258.	259.	259.	259.	259.	260.	260.	260.	260.	260.	260.	259.	260.	260.	260.	260.
AFV=	101.	90.	88.	79.	84.	81.	75.	75.	71.	77.	80.	81.	87.	84.	81.	85.	81.	85.	84.	80.	75.	73.	72.	70.
AFVH=	101.	90.	88.	79.	84.	81.	75.	76.	71.	77.	80.	81.	87.	84.	81.	85.	81.	85.	84.	80.	75.	73.	72.	70.
HGHI=	959.	959.	959.	959.	959.	959.	1013.	1067.	1121.	1175.	1228.	1282.												
	1336.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.												

JYR=75 IHO= 1 JDAY= 26

ISTAK=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3
ANS=	11.2	11.6	12.1	13.0	13.9	13.9	14.8	16.1	14.8	15.2	15.6	15.6	15.2	14.8	15.2	16.5	14.3	16.1	13.9	13.0	13.9	13.0	12.5	11.6
TEMP=	271.	271.	271.	271.	270.	270.	270.	269.	269.	269.	269.	269.	269.	269.	269.	268.	267.	267.	267.	267.	267.	267.	266.	266.	266.
AFV=	75.	72.	71.	65.	82.	77.	76.	78.	73.	75.	80.	78.	86.	85.	88.	88.	91.	93.	88.	88.	86.	88.	87.	87.
AFVH=	75.	72.	71.	65.	82.	77.	76.	79.	73.	75.	80.	79.	86.	83.	88.	88.	91.	93.	88.	88.	86.	88.	87.	87.
HGHI=	566.	566.	566.	566.	566.	566.	598.	629.	661.	693.	725.	756.												
	788.	820.	820.	820.	820.	820.	820.	820.	820.	820.	820.	820.												

JYR=75 IHO= 2 JDAY= 37

ISTAK=	3	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
ANS=	8.1	8.5	8.5	9.8	11.2	11.2	10.3	9.4	10.3	10.7	10.7	10.3	10.3	8.5	8.1	7.6	6.7	7.2	6.7	6.3	6.7	6.7	7.6	7.2
TEMP=	272.	272.	273.	274.	274.	274.	273.	273.	272.	271.	271.	271.	271.	271.	271.	271.	271.	271.	271.	271.	270.	270.	270.	270.
AFV=	68.	67.	67.	73.	76.	80.	85.	92.	88.	88.	93.	92.	96.	97.	95.	88.	92.	91.	93.	92.	86.	85.	91.	97.
AFVH=	68.	67.	67.	73.	76.	80.	85.	92.	88.	88.	93.	92.	96.	97.	95.	88.	92.	91.	93.	92.	86.	85.	91.	97.
HGHI=	1100.	1100.	1100.	1100.	1100.	1100.	1094.	1088.	1081.	1075.	1069.	1063.												
	1056.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.												

```
JYR=75 HR= 2 JDAY= 56
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS= 10.7  8.5  7.2  7.2  8.9 10.7 10.7  9.8 12.5 13.4 15.2 15.2 13.0 13.4 14.5 16.1 16.5 16.5 18.3 18.3 16.1 17.9 20.1 19.2
TEMP= 271. 271. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 271. 271. 271. 271. 271. 271. 272. 271. 271. 272. 272. 273.
AFV=   91.  81.  65.  51.  54.  41.  58.  51.  56.  53.  60.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
AFVR=  91.  83.  65.  51.  54.  41.  58.  51.  56.  53.  60.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
HLHI= 1700. 1700. 1700. 1700. 1700. 1700. 1609. 1518. 1425. 1335. 1244. 1153.
      1961.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.

JYR=75 HR= 2 JDAY= 57
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    2    2    3    2    3    3    3    3    3    3    3    3    3
AWS= 19.2 17.4 17.9 16.1 15.2 15.2 13.0 13.9 14.3 16.1 16.5 16.1 15.6 17.0 16.5 15.6 14.3 13.9 13.0 12.5 13.0 13.4 12.1 11.6
TEMP= 272. 271. 271. 271. 271. 271. 270. 270. 270. 271. 272. 273. 274. 274. 275. 275. 274. 274. 274. 273. 273. 273. 272. 272.
AFV=   82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  89.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
AFVR=  82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
HLHI= 2000. 2000. 2000. 2000. 2000. 2000. 1968. 1935. 1903. 1870. 1838. 1805.
      1771. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740.

JYR=75 HR= 3 JDAY= 62
ISTAR=  3    3    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS=  9.8  9.4  8.5  8.9  9.9  9.8 10.3  9.4  9.4  9.8 10.3 10.7 11.6 11.6 12.1 10.3 10.3 11.2 12.1 10.7 12.5 12.1 10.3  9.8
TEMP= 263. 263. 262. 262. 263. 262. 262. 262. 262. 263. 264. 264. 265. 265. 264. 264. 265. 264. 264. 264. 264. 263. 263. 263.
AFV=  119. 118. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
AFVR= 118. 118. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
HLHI= 1050. 1050. 1050. 1050. 1050. 1050. 1174. 1298. 1421. 1545. 1669. 1793.
      1916. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040.

JYR=75 HR= 3 JDAY= 77
ISTAR=  4    3    3    3    3    3    3    3    3    2    3    3    3    3    3    2    3    3    3    3    3    3    3    3
AWS=  9.4 10.3  8.9 11.2 13.9 12.5 15.2 14.3 12.5 13.4 15.6 13.0 12.1 13.0 13.4 11.2 14.8 14.3 17.0 18.3 13.9 13.0 13.0 13.4
TEMP= 277. 277. 276. 276. 275. 275. 275. 275. 275. 276. 277. 279. 279. 280. 280. 281. 280. 278. 277. 276. 276. 275. 275. 276.
AFV=  312. 310. 245. 311. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
AFVR= 312. 310. 245. 311. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
HLHI=  100.  100.  100.  100.  100.  100.  250.  400.  550.  700.  850. 1000.
      1150. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.

JYR=75 HR= 4 JDAY= 94
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS= 15.6 18.8 17.0 17.9 17.9 17.0 17.0 15.6 14.8 15.6 11.2 13.0 10.3 11.6 11.2 13.9 12.1 12.1 11.6 11.2 11.2 10.7 10.7 11.2 11.2
TEMP= 266. 266. 265. 265. 265. 265. 265. 264. 265. 265. 266. 266. 268. 268. 270. 270. 268. 268. 266. 266. 266. 266. 265. 265.
AFV=  115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 110. 122. 126. 133. 128. 123. 116. 113. 121.
AFVR= 115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 110. 122. 126. 133. 128. 123. 116. 113. 121.
HLHI= 1000. 1000. 1000. 1000. 1000. 1000. 1106. 1213. 1319. 1425. 1531. 1638.
      1744. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.

JYR=75 HR= 4 JDAY= 96
ISTAR=  3    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    2    2    3    3    3    3    3    3
AWS=  6.3  8.1  8.1  7.2  8.1  9.1  8.5  9.4  9.8  9.4  9.8  9.4  9.8 11.2 10.3 11.2 11.6 10.7  8.9  9.8  9.8  8.9  7.6  6.3
TEMP= 266. 267. 267. 266. 266. 267. 267. 267. 268. 269. 270. 271. 271. 272. 272. 272. 271. 271. 270. 269. 268. 268. 267. 268.
AFV=  120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 119. 120.
AFVR= 120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 114. 121. 122. 119. 113. 118. 120.
HLHI=  336.  336.  336.  336.  336.  336.  444.  552.  660.  768.  876.  984.
      1092. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200.
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JYR=75 IHO= 4 JDAY=103
ISTAR=  4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.5  3.1  3.1  2.7  2.2  1.8  1.8  1.3  2.7  3.6  4.5  5.4  6.3  6.3  6.3  6.7  6.7  5.4  4.9  4.0  4.0  3.6  3.6  3.6  3.6
TEMP= 270. 270. 270. 270. 270. 270. 271. 271. 272. 273. 275. 276. 277. 277. 277. 277. 277. 276. 275. 274. 274. 272. 272. 272. 272.
AFV=  190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
AFVR= 190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
HLHI=  778.  778.  778.  778.  778.  778.  778. 1029. 1279. 1529. 1779. 2029. 2280.
      2530. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780.

JYR=75 IHO= 4 JDAY=120
ISTAR=  3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    1    2    3    3    3    3    3    3
AWS=  9.4  9.8 10.3  9.8 10.7  9.8 10.3 11.2 11.2 10.7 10.3 11.2 11.2  9.4 11.6 11.6 11.2 10.7 10.3  9.4  9.8 11.2 12.1 12.5
TEMP= 280. 280. 281. 281. 280. 280. 281. 281. 282. 284. 284. 285. 284. 285. 284. 284. 283. 282. 282. 282. 282. 282. 282. 282.
AFV=  310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 300. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
AFVR= 310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 300. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
HLHI=  600.  600.  600.  600.  600.  600.  600.  720.  840.  960. 1080. 1170.
      1260. 1350. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.

JYR=75 IHO= 5 JDAY=137
ISTAR=  4    4    4    4    4    4    3    3    3    3    2    2    2    3    3    3    3    3    3    3    3    3    3    3
AWS=  6.3  6.7 10.3  8.5  6.3  5.8  6.7  7.2  5.8  6.3  6.7  7.6  8.1  7.6  8.1  8.1  9.8  8.9  8.5  8.1  8.5  9.4  9.8  9.4
TEMP= 285. 285. 284. 284. 284. 285. 284. 285. 286. 287. 289. 290. 291. 291. 291. 291. 290. 289. 289. 289. 287. 287. 286. 286. 286.
AFV=  275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 321. 324. 324. 324. 318. 321. 324. 327. 327.
AFVR= 275. 278. 274. 291. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 321. 324. 324. 324. 318. 321. 324. 327. 327.
HLHI=  100.  100.  100.  100.  100.  100.  100.  234.  368.  501.  635.  769.  903.
      1036. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170.

JYR=75 IHO= 6 JDAY=177
ISTAR=  4    3    3    4    4    4    4    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    3    3
AWS=  5.8  4.9  4.5  4.0  4.9  5.4  5.4  6.7  5.8  5.4  4.9  5.8  6.7  5.4  5.4  5.8  5.8  4.9  5.8  6.7  7.2  7.6  7.2  4.9
TEMP= 291. 291. 291. 291. 291. 291. 290. 290. 290. 291. 290. 290. 290. 290. 291. 292. 291. 290. 289. 290. 289. 289. 289. 289. 289.
AFV=  290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 297. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
AFVR= 290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 297. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
HLHI=  100.  100.  100.  100.  100.  100.  189.  278.  366.  455.  544.  633.
       721.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.

JYR=75 IHO= 7 JDAY=187
ISTAR=  4    4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4    4
AWS=  3.6  3.6  3.1  3.1  3.1  3.1  4.0  4.5  2.7  4.0  4.5  4.5  4.0  4.5  4.0  3.6  4.0  4.5  4.9  5.4  6.3  5.4  5.4  4.5  4.5
TEMP= 293. 292. 292. 291. 291. 291. 291. 292. 294. 295. 296. 297. 298. 299. 299. 299. 299. 297. 296. 295. 294. 294. 293. 292. 292.
AFV=  300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300. 300.
AFVR= 300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 291. 293. 298. 299. 300. 300.
HLHI=  389.  389.  389.  389.  389.  389.  571.  754.  937. 1119. 1302. 1485.
      1667. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.

JYR=75 IHO= 7 JDAY=198
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4    4    4
AWS=  4.5  4.6  4.0  2.2  2.2  4.0  5.8  4.0  3.6  2.7  2.7  4.5  5.8  4.9  4.9  5.8  4.9  4.9  4.5  4.0  3.1  4.0  4.9  4.0  4.0
TEMP= 292. 291. 291. 290. 290. 289. 290. 290. 291. 292. 294. 295. 296. 296. 296. 295. 296. 295. 294. 294. 294. 293. 292. 291. 291. 289.
AFV=  310. 302. 291. 306. 302. 319. 328. 328. 328. 293. 302. 316. 309. 308. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
AFVR= 310. 302. 291. 306. 302. 319. 328. 328. 328. 293. 302. 316. 309. 308. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
HLHI=  450.  450.  450.  450.  450.  450.  556.  663.  769.  875.  981. 1088.
      1194. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.
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JYR=75 IMO= 7 JDAY=200
ISTAR=  4    4    4    1    4    1    3    3    3    2    1    1    1    2    2    2    1    1    1    1    3    4    4    4
AWS=  6.7  8.9  8.9  8.9  9.8 10.3 10.3  9.4  9.4  9.4  8.1  8.9  8.1  8.9  9.4  8.9  8.9  7.6  8.9  6.7  6.7  8.1  8.9  9.8
TEMP= 292. 292. 292. 292. 292. 292. 293. 294. 294. 294. 296. 297. 297. 299. 299. 299. 299. 298. 297. 297. 297. 295. 296. 296.
AFV=  350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.   0.
AFVR= 350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.   0.
HGHI= 1100. 1100. 1100. 1100. 1100. 1100. 1100. 1154. 1208. 1261. 1315. 1369. 1423.
      1476. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530.


JYR=75 IMO= 9 JDAY=261
ISTAR=  3    4    4    4    3    4    4    4    3    1    1    1    1    1    1    3    1    1    1    1    1    1    1    4
AWS=  8.5  9.8 10.7  9.8 10.7 11.2 12.5 12.5 12.1 11.6 14.3 14.3 15.2 13.9 13.9 13.9 13.4 12.5 11.6 12.1 11.2 11.6 10.7  9.4
TEMP= 287. 286. 287. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 287. 287. 287. 287. 287. 287. 287. 287. 287. 287.
AFV=  315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
AFVR= 315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
HGHI=  600.  600.  600.  600.  600.  600.  571.  543.  514.  485.  456.  428.
       399.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.


JYR=75 IMO= 9 JDAY=267
ISTAR=  3    3    3    3    3    3    3    1    3    3    3    3    3    1    3    3    3    3    3    3    3    3    3    3
AWS=  9.4 10.7 11.6 13.4  9.8  8.1  8.9 10.7 10.3 10.3 10.7  9.4  8.9  8.5  9.4 10.7 10.7  9.8 10.7  9.8 11.2 10.3 10.3 10.3
TEMP= 282. 282. 282. 282. 281. 282. 281. 282. 282. 282. 282. 282. 282. 283. 282. 282. 282. 282. 282. 283. 283. 283. 284. 283.
AFV=  248. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
AFVR= 248. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
HGHI= 1400. 1400. 1400. 1400. 1400. 1400. 1245. 1090.  935.  780.  625.  470.
       315.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.


JYR=75 IMO=12 JDAY=335
ISTAR=  3    3    3    3    2    3    3    3    3    3    2    2    2    2    2    3    1    1    1    1    4    4    4    4
AWS= 14.3 14.8 12.5 12.5 15.2 14.8 12.1 12.5 13.9 13.9 15.2 13.9 11.6 13.4 10.7  9.8  9.4  7.6  7.6  7.6  8.9  6.7  5.8  4.9
TEMP= 279. 276. 274. 272. 271. 270. 269. 269. 269. 268. 268. 269. 269. 269. 270. 269. 268. 268. 283. 283. 283. 283. 283. 283.
AFV=   87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
AFVR=  87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
HGHI= 1800. 1800. 1800. 1800. 1800. 1800. 1775. 1750. 1725. 1700. 1675. 1650.
      1625. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600.

YEAR BASED ON  20. DAYS
```

PENN. ELEC. SEWARD

NOM--502

MAXIMUM MEAN CONC= 1.37002E-04 DIRECTION= A DISTANCE= 2.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1		4.98328E-05	4.72493E-05	4.63934E-05	4.58281E-05	4.54164E-05
2		4.60627E-05	4.53754E-05	4.52101E-05	4.51160E-05	4.50551E-05
3		4.51642E-05	4.50578E-05	4.50143E-05	4.53041E-05	4.56826E-05
4		4.52160E-05	4.52297E-05	4.51431E-05	4.50703E-05	4.50217E-05
5		5.07288E-05	6.14347E-05	6.40566E-05	6.16691E-05	5.77309E-05
6		4.98591E-05	5.34283E-05	5.42548E-05	5.36856E-05	5.17928E-05
7		6.22542E-05	8.08962E-05	8.49140E-05	8.29885E-05	7.52238E-05
8		7.44539E-05	1.23926E-04	1.37001E-04	1.35481E-04	1.18849E-04
9		5.94871E-05	6.29789E-05	6.46832E-05	6.42434E-05	6.08716E-05
10		6.49117E-05	7.46841E-05	7.71311E-05	7.50293E-05	6.83932E-05
11		7.36824E-05	8.17752E-05	8.42511E-05	8.18382E-05	7.41602E-05
12		6.72056E-05	6.52455E-05	6.49188E-05	6.32211E-05	5.97587E-05
13		5.64781E-05	5.16150E-05	4.98186E-05	4.84383E-05	4.71353E-05
14		4.89941E-05	4.67485E-05	4.60527E-05	4.56135E-05	4.53010E-05
15		4.58653E-05	4.53317E-05	4.51867E-05	4.51018E-05	4.50457E-05
16		4.51103E-05	4.50356E-05	4.50192E-05	4.50090E-05	4.50036E-05
17		4.50080E-05	4.50021E-05	4.50009E-05	4.50004E-05	4.50001E-05
18		4.50003E-05	4.50001E-05	4.50000E-05	4.50000E-05	4.50000E-05
19		4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05
20		4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05
21		4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05
22		4.50177E-05	4.50402E-05	4.50381E-05	4.50164E-05	4.50063E-05
23		4.55111E-05	4.79503E-05	4.88889E-05	4.90395E-05	4.83225E-05
24		4.59339E-05	4.94054E-05	5.03249E-05	5.01615E-05	4.90843E-05
25		4.75173E-05	5.56515E-05	5.78577E-05	5.74958E-05	5.50106E-05
26		4.79084E-05	4.98571E-05	5.02304E-05	4.93042E-05	4.88449E-05
27		5.28986E-05	4.96327E-05	4.84223E-05	4.76621E-05	4.65932E-05
28		6.46779E-05	5.64889E-05	5.35038E-05	5.15931E-05	4.98779E-05
29		1.01899E-05	7.32152E-05	7.38494E-05	7.45711E-05	7.22313E-05
30		8.64483E-05	7.91957E-05	7.57504E-05	7.11876E-05	6.45081E-05
31		8.10766E-05	8.25431E-05	8.00176E-05	7.47021E-05	6.67083E-05
32		6.90648E-05	8.09829E-05	8.22193E-05	7.99394E-05	7.22139E-05
33		5.16381E-05	4.77887E-05	4.66450E-05	4.59816E-05	4.54930E-05
34		4.81298E-05	4.72511E-05	4.81794E-05	4.81730E-05	4.76562E-05
35		5.20184E-05	4.94706E-05	4.85423E-05	4.77853E-05	4.69842E-05
36		5.57245E-05	5.50903E-05	5.63400E-05	5.55201E-05	5.31884E-05

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PENN. ELEC. SEWARD

4011--802

YEARLY MAXIMUM 24-HOUR CONC= 4.1594E-04 DIRECTION= 80. DISTANCE= 2.1 KM DAY= 57.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.1285E-04 (200)	8.9984E-05 (200)	7.2868E-05 (200)	6.1561E-05 (200)	5.3329E-05 (200)
2	6.6254E-05 (200)	5.2505E-05 (200)	4.9190E-05 (200)	4.7297E-05 (200)	4.5090E-05 (200)
3	4.8254E-05 (200)	4.5973E-05 (200)	4.6584E-05 (7)	5.0828E-05 (7)	5.9564E-05 (7)
4	4.9004E-05 (56)	4.9520E-05 (56)	4.7817E-05 (56)	4.5369E-05 (56)	4.5408E-05 (56)
5	1.5792E-04 (56)	1.2254E-04 (56)	4.0542E-04 (56)	3.7802E-04 (56)	2.9950E-04 (56)
6	7.8934E-05 (56)	1.1428E-04 (56)	1.4462E-04 (56)	1.3967E-04 (56)	1.1998E-04 (56)
7	1.6395E-04 (57)	2.7472E-04 (26)	2.8875E-04 (26)	2.6457E-04 (14)	2.4151E-04 (14)
8	2.7790E-04 (335)	4.1594E-04 (57)	4.1547E-04 (57)	3.7643E-04 (335)	3.0425E-04 (37)
9	1.5205E-04 (335)	1.3719E-04 (335)	1.7341E-04 (37)	2.0759E-04 (37)	2.0429E-04 (37)
10	1.8353E-04 (96)	3.0066E-04 (62)	3.5919E-04 (62)	3.5900E-04 (62)	2.9973E-04 (62)
11	2.8761E-04 (96)	2.8317E-04 (96)	3.0848E-04 (96)	3.1275E-04 (96)	2.7718E-04 (96)
12	2.9464E-04 (103)	1.9504E-04 (103)	1.3801E-04 (94)	1.7243E-04 (94)	1.4810E-04 (96)
13	2.2941E-04 (103)	1.3942E-04 (103)	1.0590E-04 (103)	8.2820E-05 (103)	6.5093E-05 (94)
14	1.1827E-04 (103)	7.7774E-05 (103)	6.4862E-05 (103)	5.6643E-05 (103)	5.0735E-05 (103)
15	5.1714E-05 (103)	5.1499E-05 (103)	4.8673E-05 (103)	4.7007E-05 (103)	4.5903E-05 (103)
16	1.7179E-05 (103)	4.5706E-05 (103)	4.5353E-05 (103)	4.5180E-05 (103)	4.5071E-05 (103)
17	4.5161E-05 (103)	4.5041E-05 (103)	4.5019E-05 (103)	4.5008E-05 (103)	4.5003E-05 (103)
18	4.5006E-05 (103)	4.5001E-05 (103)	4.5000E-05 (103)	4.5000E-05 (103)	4.5000E-05 (103)
19	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)
20	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)
21	4.5000E-05 (267)	4.5000E-05 (267)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)
22	4.5344E-05 (267)	4.5004E-05 (267)	4.5603E-05 (267)	4.5328E-05 (267)	4.5106E-05 (267)
23	5.5196E-05 (267)	1.0420E-04 (267)	1.2278E-04 (267)	1.2519E-04 (267)	1.1144E-04 (267)
24	6.3113E-05 (267)	1.3295E-04 (267)	1.5142E-04 (267)	1.4820E-04 (267)	1.2668E-04 (267)
25	8.8789E-05 (267)	2.5565E-04 (267)	3.0088E-04 (267)	2.9426E-04 (267)	2.4493E-04 (267)
26	7.2903E-05 (187)	1.2449E-04 (267)	1.4044E-04 (267)	1.3719E-04 (267)	1.1882E-04 (267)
27	1.1729E-04 (187)	9.0765E-05 (187)	7.3715E-05 (187)	6.7297E-05 (267)	6.2705E-05 (267)
28	2.3867E-04 (187)	1.5436E-04 (187)	1.1719E-04 (187)	9.0772E-05 (177)	9.5351E-05 (177)
29	3.0221E-04 (187)	2.1735E-04 (187)	2.9875E-04 (177)	3.8492E-04 (177)	4.0280E-04 (177)
30	3.2983E-04 (120)	3.8030E-04 (120)	3.9013E-04 (120)	3.5706E-04 (120)	2.8153E-04 (120)
31	2.0175E-04 (120)	3.6224E-04 (261)	3.8815E-04 (261)	3.5508E-04 (261)	2.7651E-04 (261)
32	2.7246E-04 (77)	3.4634E-04 (77)	3.3023E-04 (77)	3.2851E-04 (137)	2.8117E-04 (137)
33	1.1656E-04 (77)	7.5919E-05 (77)	6.3547E-05 (77)	5.5933E-05 (77)	5.0691E-05 (77)
34	8.6121E-05 (200)	9.4667E-05 (200)	1.0453E-04 (200)	1.0636E-04 (200)	9.7302E-05 (200)
35	1.9244E-04 (200)	1.3161E-04 (200)	1.1644E-04 (200)	1.0050E-04 (200)	8.2591E-05 (200)
36	2.5926E-04 (200)	2.6476E-04 (200)	2.7278E-04 (200)	2.5511E-04 (200)	2.0876E-04 (200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 8.2616E-04 DIRECTION= 0. DISTANCE= 1.2 KM DAY=200. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	4.3319E-04 (200)	2.2418E-04 (200)	1.5579E-04 (200)	1.1119E-04 (200)	7.9461E-05 (200)
2	1.9526E-04 (200)	9.5638E-05 (200)	7.3953E-05 (200)	6.1297E-05 (200)	5.2926E-05 (200)
3	7.0688E-05 (200)	5.2718E-05 (200)	5.7671E-05 (7)	9.1621E-05 (7)	1.5351E-04 (7)
4	5.6219E-05 (56)	5.3994E-05 (56)	5.0099E-05 (56)	4.7533E-05 (56)	4.5779E-05 (56)
5	3.5813E-04 (56)	6.9436E-04 (56)	6.9595E-04 (56)	6.5806E-04 (56)	5.3030E-04 (56)
6	1.6751E-04 (56)	2.6779E-04 (56)	2.6641E-04 (26)	2.5293E-04 (56)	2.2880E-04 (56)
7	4.5877E-04 (57)	6.8388E-04 (57)	6.9284E-04 (57)	6.5785E-04 (26)	5.6538E-04 (14)
8	6.5447E-04 (335)	6.9603E-04 (57)	7.0866E-04 (335)	6.7165E-04 (7)	6.0814E-04 (335)
9	5.1342E-04 (335)	4.6341E-04 (26)	5.5395E-04 (56)	6.2907E-04 (56)	5.9495E-04 (37)
10	5.6306E-04 (62)	6.6409E-04 (94)	6.7706E-04 (94)	6.4551E-04 (62)	5.5832E-04 (62)
11	7.0530E-04 (96)	6.7758E-04 (94)	6.6921E-04 (94)	6.5558E-04 (94)	6.1402E-04 (96)
12	6.8549E-04 (103)	4.1759E-04 (103)	4.7335E-04 (94)	4.7478E-04 (96)	4.0164E-04 (96)
13	5.4548E-04 (103)	2.9536E-04 (103)	2.5648E-04 (94)	2.4920E-04 (94)	2.0499E-04 (94)
14	3.0167E-04 (103)	1.5874E-04 (103)	1.1474E-04 (103)	8.6640E-05 (103)	6.6113E-05 (103)
15	1.1943E-04 (103)	7.4930E-05 (103)	6.2367E-05 (103)	5.4783E-05 (103)	4.9585E-05 (103)
16	5.6934E-05 (103)	4.9069E-05 (103)	4.7155E-05 (103)	4.6102E-05 (103)	4.5453E-05 (103)
17	4.6028E-05 (103)	4.5276E-05 (103)	4.5128E-05 (103)	4.5057E-05 (103)	4.5019E-05 (103)
18	4.5045E-05 (103)	4.5009E-05 (103)	4.5003E-05 (103)	4.5001E-05 (103)	4.5000E-05 (103)
19	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)
20	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)
21	4.5000E-05 (267)	4.5000E-05 (267)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)
22	4.6791E-05 (267)	4.8480E-05 (267)	4.8047E-05 (267)	4.6757E-05 (267)	4.5593E-05 (267)
23	9.7134E-05 (267)	3.1330E-04 (267)	4.3573E-04 (267)	4.7284E-04 (267)	4.1507E-04 (267)
24	1.0706E-04 (267)	3.9066E-04 (267)	4.8002E-04 (267)	4.7762E-04 (267)	3.9186E-04 (267)
25	1.4917E-04 (267)	5.8459E-04 (267)	7.0918E-04 (267)	6.9586E-04 (267)	5.8543E-04 (267)
26	2.3111E-04 (187)	4.8868E-04 (267)	5.7630E-04 (267)	5.5735E-04 (267)	4.5788E-04 (267)
27	5.6035E-04 (187)	3.0956E-04 (187)	2.2934E-04 (267)	2.2182E-04 (267)	1.8687E-04 (267)
28	7.6868E-04 (187)	4.3041E-04 (187)	2.9670E-04 (187)	3.6545E-04 (177)	4.2430E-04 (177)
29	7.0392E-04 (187)	4.7254E-04 (198)	5.7769E-04 (177)	6.8163E-04 (177)	7.0055E-04 (177)
30	7.2615E-04 (120)	6.5150E-04 (120)	7.2702E-04 (120)	6.9483E-04 (120)	6.3472E-04 (137)
31	7.4721E-04 (137)	7.2482E-04 (261)	7.3769E-04 (261)	6.9088E-04 (120)	5.6855E-04 (120)
32	5.2558E-04 (77)	7.0395E-04 (77)	7.4225E-04 (261)	7.1256E-04 (137)	6.2937E-04 (137)
33	2.7983E-04 (77)	1.4276E-04 (77)	1.0401E-04 (77)	7.9793E-05 (77)	6.3178E-05 (77)
34	1.9299E-04 (200)	3.1606E-04 (200)	4.4508E-04 (200)	4.9273E-04 (200)	4.4020E-04 (200)
35	5.9891E-04 (200)	4.5511E-04 (200)	4.3030E-04 (200)	3.7920E-04 (200)	2.9004E-04 (200)
36	8.2616E-04 (200)	6.1213E-04 (200)	7.4018E-04 (200)	7.2671E-04 (200)	5.8875E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
57	4.1594E-04	9	2.07
56	4.0542E-04	5	2.75
335	4.0495E-04	8	2.75
177	4.0280E-04	29	5.23
120	3.9013E-04	30	2.75
261	3.8815E-04	31	2.75
62	3.5919E-04	10	2.75
77	3.4634E-04	32	2.07
37	3.4612E-04	8	3.65
137	3.2851E-04	32	3.65
14	3.2278E-04	8	3.65
7	3.1982E-04	8	3.65
26	3.1401E-04	8	2.75
96	3.1275E-04	11	3.65
94	3.0702E-04	11	2.75
187	3.0221E-04	29	1.17
267	3.0088E-04	25	2.75
103	2.9464E-04	12	1.17
188	2.8102E-04	29	1.17
200	2.7978E-04	36	2.75

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PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

SEWARD PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 2 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=  0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGP=    45.0

DAY--  1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1   1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
```

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1120.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1085.0	1330.0	1200.0	1350.0	1600.0
2	1090.0	1150.0	1370.0	1500.0	1500.0
3	1100.0	1200.0	1250.0	1400.0	1500.0
4	1115.0	1120.0	1400.0	1440.0	1450.0
5	1120.0	1100.0	1250.0	1420.0	1550.0
6	1130.0	1240.0	1140.0	1440.0	1500.0
7	1130.0	1300.0	1100.0	1300.0	1720.0
8	1135.0	1280.0	1400.0	1150.0	1720.0
9	1150.0	1240.0	1350.0	1400.0	1950.0
10	1145.0	1240.0	1450.0	1800.0	2100.0
11	1135.0	1250.0	1500.0	1950.0	1800.0
12	1120.0	1210.0	1550.0	2100.0	2460.0
13	1120.0	1260.0	1500.0	2100.0	2560.0
14	1120.0	1220.0	1500.0	2000.0	2500.0
15	1120.0	1220.0	1400.0	1850.0	2530.0
16	1100.0	1280.0	1350.0	1700.0	2450.0
17	1100.0	1210.0	1450.0	1640.0	2200.0
18	1100.0	1140.0	1350.0	1620.0	1900.0
19	1070.0	1100.0	1200.0	1600.0	1400.0
20	1080.0	1080.0	1100.0	1540.0	1300.0
21	1240.0	1080.0	1080.0	1300.0	1210.0
22	1210.0	1090.0	1080.0	1080.0	1210.0
23	1270.0	1230.0	1150.0	1080.0	1400.0
24	1420.0	1250.0	1200.0	1200.0	1060.0
25	1485.0	1350.0	1240.0	1300.0	1400.0
26	1500.0	1470.0	1300.0	1400.0	1350.0
27	1420.0	1560.0	1470.0	1460.0	1570.0
28	1310.0	1540.0	1540.0	1400.0	1660.0
29	1440.0	1400.0	1400.0	1550.0	1660.0
30	1550.0	1320.0	1400.0	1600.0	1710.0
31	1550.0	1300.0	1540.0	1620.0	1770.0
32	1560.0	1330.0	1400.0	1700.0	1750.0
33	1530.0	1550.0	1550.0	1800.0	1700.0
34	1400.0	1400.0	1680.0	1550.0	1600.0
35	1250.0	1330.0	1300.0	1580.0	1620.0
36	1180.0	1200.0	1350.0	1350.0	1620.0

STACK # 1--SEWARD STACK 1 SRC SO2
STACK # 2--SEWARD STACK 2 SRC NORMAL

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	75.00	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	164.00	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.03 0.93 0.99 1.10 1.03 0.99 1.13 1.09 1.10 0.92 0.87 0.81

YEAR BASED ON 365. DAYS

PENN. ELEC. SEWARD

NOM--802

MAXIMUM MEAN CONC= 5.0017E-05 DIRECTION= 8 DISTANCE= 3.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	4.55883E-05	4.57008E-05	4.57548E-05	4.57686E-05	4.57140E-05
2	4.56967E-05	4.57824E-05	4.58173E-05	4.58278E-05	4.57842E-05
3	4.61182E-05	4.63933E-05	4.64918E-05	4.65021E-05	4.63722E-05
4	4.67355E-05	4.72915E-05	4.75221E-05	4.75730E-05	4.73433E-05
5	4.74604E-05	4.85773E-05	4.90171E-05	4.90758E-05	4.85966E-05
6	4.74794E-05	4.79731E-05	4.82275E-05	4.82910E-05	4.79974E-05
7	4.73957E-05	4.84797E-05	4.90874E-05	4.93777E-05	4.91334E-05
8	4.72906E-05	4.87779E-05	4.96103E-05	5.00167E-05	4.97718E-05
9	4.70132E-05	4.77844E-05	4.84522E-05	4.89177E-05	4.88973E-05
10	4.75503E-05	4.82252E-05	4.87127E-05	4.89550E-05	4.87207E-05
11	4.80119E-05	4.85356E-05	4.88787E-05	4.89465E-05	4.85632E-05
12	4.75438E-05	4.75892E-05	4.76691E-05	4.76545E-05	4.74275E-05
13	4.65105E-05	4.64657E-05	4.65117E-05	4.65250E-05	4.64396E-05
14	4.58036E-05	4.58200E-05	4.58422E-05	4.58579E-05	4.58201E-05
15	4.55166E-05	4.55515E-05	4.55482E-05	4.55697E-05	4.55884E-05
16	4.54153E-05	4.54498E-05	4.54350E-05	4.54359E-05	4.54386E-05
17	4.53443E-05	4.53575E-05	4.53497E-05	4.53598E-05	4.53683E-05
18	4.52840E-05	4.53247E-05	4.53145E-05	4.53035E-05	4.52823E-05
19	4.52412E-05	4.53187E-05	4.53133E-05	4.52837E-05	4.52272E-05
20	4.52052E-05	4.53019E-05	4.53188E-05	4.53139E-05	4.52896E-05
21	4.51705E-05	4.52938E-05	4.53294E-05	4.53346E-05	4.53059E-05
22	4.51297E-05	4.52606E-05	4.53101E-05	4.53431E-05	4.53559E-05
23	4.51278E-05	4.52765E-05	4.53108E-05	4.53063E-05	4.52672E-05
24	4.51694E-05	4.53185E-05	4.53516E-05	4.53580E-05	4.53438E-05
25	4.52490E-05	4.54450E-05	4.54774E-05	4.54657E-05	4.54216E-05
26	4.52948E-05	4.54050E-05	4.53999E-05	4.53750E-05	4.53362E-05
27	4.54472E-05	4.55089E-05	4.54772E-05	4.54340E-05	4.53814E-05
28	4.57111E-05	4.56350E-05	4.55747E-05	4.55528E-05	4.55626E-05
29	4.60479E-05	4.59765E-05	4.60007E-05	4.60616E-05	4.60919E-05
30	4.64048E-05	4.64674E-05	4.64540E-05	4.63753E-05	4.61894E-05
31	4.66571E-05	4.72822E-05	4.74009E-05	4.73122E-05	4.69882E-05
32	4.63888E-05	4.73549E-05	4.76441E-05	4.76494E-05	4.73390E-05
33	4.57528E-05	4.61321E-05	4.62232E-05	4.62001E-05	4.60570E-05
34	4.54472E-05	4.56180E-05	4.56932E-05	4.57342E-05	4.57122E-05
35	4.54454E-05	4.54598E-05	4.54683E-05	4.54690E-05	4.54354E-05
36	4.58422E-05	4.59122E-05	4.58911E-05	4.58188E-05	4.56728E-05

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.2618E-04 DIRECTION=300. DISTANCE= 2.8 KM DAY=120.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM		2.1 KM		2.8 KM		3.7 KM		5.2 KM	
1	6.8847E-05	(200)	6.8100E-05	(199)	7.4512E-05	(254)	8.2491E-05	(254)	8.4207E-05	(254)
2	6.7029E-05	(113)	6.0649E-05	(164)	6.2044E-05	(164)	6.0790E-05	(164)	5.9277E-05	(167)
3	7.7074E-05	(208)	7.2254E-05	(349)	7.3650E-05	(349)	7.2750E-05	(263)	7.0975E-05	(263)
4	8.9047E-05	(208)	8.8020E-05	(156)	9.5056E-05	(156)	9.4893E-05	(306)	9.0875E-05	(306)
5	8.4115E-05	(208)	1.0955E-04	(56)	1.1661E-04	(56)	1.1155E-04	(56)	9.6104E-05	(56)
6	8.3056E-05	(189)	8.4294E-05	(39)	8.9094E-05	(332)	9.3430E-05	(332)	8.9408E-05	(332)
7	8.3422E-05	(189)	9.5229E-05	(26)	9.8754E-05	(26)	9.8428E-05	(308)	9.4858E-05	(308)
8	8.6870E-05	(58)	1.1854E-04	(57)	1.1893E-04	(57)	1.0899E-04	(57)	1.0184E-04	(7)
9	9.0357E-05	(183)	8.1723E-05	(9)	8.7398E-05	(9)	8.4871E-05	(9)	8.4609E-05	(124)
10	9.9796E-05	(111)	9.8082E-05	(62)	1.1098E-04	(62)	1.1151E-04	(62)	9.9324E-05	(62)
11	1.0232E-04	(96)	1.0046E-04	(94)	1.0657E-04	(94)	1.0706E-04	(96)	9.9963E-05	(96)
12	1.0393E-04	(103)	8.9218E-05	(79)	9.1704E-05	(275)	9.3117E-05	(275)	8.5528E-05	(275)
13	8.8513E-05	(103)	8.4571E-05	(67)	9.0624E-05	(67)	8.7994E-05	(67)	7.8084E-05	(67)
14	7.9019E-05	(117)	7.0134E-05	(185)	6.8654E-05	(303)	6.8931E-05	(303)	6.5361E-05	(303)
15	7.4059E-05	(219)	6.6159E-05	(219)	6.2702E-05	(220)	6.3411E-05	(86)	6.6555E-05	(86)
16	7.3753E-05	(219)	6.9210E-05	(186)	6.4385E-05	(186)	6.4118E-05	(20)	7.0057E-05	(19)
17	7.4830E-05	(180)	7.1461E-05	(186)	6.6075E-05	(186)	5.9918E-05	(186)	6.1294E-05	(218)
18	7.9445E-05	(180)	7.2619E-05	(180)	6.5841E-05	(180)	5.9681E-05	(180)	5.7849E-05	(210)
19	7.3453E-05	(180)	6.7772E-05	(180)	6.1788E-05	(180)	6.2648E-05	(218)	6.3677E-05	(218)
20	6.3302E-05	(180)	6.3880E-05	(181)	6.0233E-05	(179)	5.8324E-05	(179)	5.6912E-05	(160)
21	6.2529E-05	(181)	6.8707E-05	(181)	6.8159E-05	(218)	6.7705E-05	(218)	6.4063E-05	(218)
22	5.8562E-05	(181)	6.6048E-05	(181)	6.5018E-05	(181)	6.7144E-05	(159)	6.8945E-05	(159)
23	5.3922E-05	(181)	6.3181E-05	(181)	6.3140E-05	(267)	6.3870E-05	(267)	6.0745E-05	(267)
24	5.5341E-05	(179)	6.4601E-05	(267)	6.8988E-05	(267)	6.8428E-05	(267)	6.3627E-05	(267)
25	5.9759E-05	(179)	9.0812E-05	(267)	1.0115E-04	(267)	1.0002E-04	(267)	8.9310E-05	(267)
26	5.9928E-05	(179)	6.3869E-05	(179)	6.4560E-05	(267)	6.3970E-05	(267)	6.0218E-05	(267)
27	6.7373E-05	(187)	7.0279E-05	(73)	7.3344E-05	(73)	7.1187E-05	(73)	6.4839E-05	(73)
28	9.1847E-05	(187)	7.1699E-05	(187)	6.7354E-05	(73)	6.3687E-05	(73)	6.0955E-05	(119)
29	1.0707E-04	(187)	8.6889E-05	(187)	9.7402E-05	(177)	1.1617E-04	(177)	1.2082E-04	(177)
30	1.1172E-04	(120)	1.2342E-04	(120)	1.2618E-04	(120)	1.1879E-04	(120)	1.0119E-04	(120)
31	9.5802E-05	(194)	1.1914E-04	(261)	1.2585E-04	(261)	1.1844E-04	(261)	1.0006E-04	(261)
32	9.2816E-05	(77)	1.0879E-04	(77)	1.0570E-04	(77)	1.0749E-04	(137)	9.7412E-05	(137)
33	7.1646E-05	(112)	7.5384E-05	(6)	8.0592E-05	(6)	7.8836E-05	(6)	7.1231E-05	(6)
34	6.9150E-05	(112)	6.2833E-05	(112)	6.0927E-05	(325)	6.0904E-05	(311)	5.9526E-05	(311)
35	7.8407E-05	(200)	6.6521E-05	(200)	6.2373E-05	(200)	6.3967E-05	(201)	6.2734E-05	(201)
36	9.6962E-05	(200)	9.8156E-05	(200)	1.0001E-04	(200)	9.6060E-05	(200)	8.4933E-05	(200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.7193E-04 DIRECTION= 60. DISTANCE= 2.8 KM DAY= 39. HOUR= 300.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.7181E-04 (195)	1.4577E-04 (204)	1.5241E-04 (254)	1.8769E-04 (254)	1.8970E-04 (254)
2	1.7494E-04 (238)	1.3116E-04 (113)	1.2754E-04 (113)	1.3529E-04 (83)	1.3910E-04 (205)
3	2.1487E-04 (238)	1.6421E-04 (191)	1.8208E-04 (312)	1.9690E-04 (312)	1.9264E-04 (241)
4	2.0266E-04 (205)	1.7940E-04 (156)	1.9604E-04 (156)	1.8870E-04 (156)	1.9242E-04 (114)
5	2.4933E-04 (237)	1.[illegible]00E-04 (3)	2.4652E-04 (3)	2.6443E-04 (3)	2.3816E-04 (3)
6	2.3710E-04 (110)	2.[illegible]55E-04 (39)	2.7193E-04 (39)	2.5394E-04 (39)	2.0941E-04 (39)
7	2.2424E-04 (154)	1.8348E-04 (26)	2.0596E-04 (234)	2.2030E-04 (309)	2.2508E-04 (42)
8	2.0350E-04 (58)	1.9628E-04 (93)	1.9067E-04 (19)	1.9607E-04 (234)	1.8650E-04 (234)
9	2.0334E-04 (183)	1.7705E-04 (9)	1.9247E-04 (9)	2.0093E-04 (245)	2.0404E-04 (42)
10	2.0728E-04 (91)	1.9587E-04 (93)	1.9415E-04 (94)	1.9619E-04 (256)	1.8565E-04 (229)
11	2.2906E-04 (97)	1.9384E-04 (93)	2.1760E-04 (81)	2.3095E-04 (81)	2.1056E-04 (81)
12	2.0293E-04 (95)	1.7852E-04 (79)	1.9436E-04 (126)	1.8454E-04 (126)	1.7308E-04 (98)
13	2.0579E-04 (303)	1.6327E-04 (67)	1.8003E-04 (67)	1.7273E-04 (284)	1.8092E-04 (206)
14	1.6484E-04 (117)	1.6774E-04 (185)	1.4989E-04 (185)	1.6380E-04 (302)	1.5701E-04 (302)
15	1.9329E-04 (219)	1.5862E-04 (210)	1.5292E-04 (210)	1.3278E-04 (210)	1.4433E-04 (20)
16	1.7811E-04 (220)	1.4603E-04 (186)	1.3005E-04 (186)	1.4599E-04 (20)	1.6006E-04 (20)
17	1.7943E-04 (180)	1.5214E-04 (186)	1.2742E-04 (186)	1.3396E-04 (218)	1.3714E-04 (218)
18	1.6398E-04 (180)	1.3970E-04 (186)	1.3083E-04 (210)	1.2400E-04 (210)	1.1104E-04 (92)
19	1.6501E-04 (180)	1.3433E-04 (180)	1.1275E-04 (182)	1.3040E-04 (218)	1.3642E-04 (218)
20	1.5755E-04 (218)	1.3880E-04 (181)	1.1718E-04 (181)	1.0756E-04 (179)	1.2027E-04 (219)
21	1.8196E-04 (218)	1.6624E-04 (218)	1.4799E-04 (218)	1.2791E-04 (218)	1.2045E-04 (73)
22	1.1645E-04 (218)	1.0870E-04 (181)	1.1576E-04 (128)	1.1250E-04 (128)	1.2960E-04 (217)
23	9.0417E-05 (196)	1.2448E-04 (181)	1.3577E-04 (267)	1.4545E-04 (267)	1.3515E-04 (218)
24	1.0456E-04 (130)	1.2486E-04 (267)	1.4677E-04 (267)	1.4702E-04 (267)	1.3389E-04 (266)
25	1.2182E-04 (130)	1.7039E-04 (267)	2.0062E-04 (267)	1.9838E-04 (267)	1.7325E-04 (267)
26	1.3596E-04 (130)	1.3686E-04 (179)	1.4748E-04 (267)	1.4383E-04 (267)	1.2464E-04 (267)
27	1.6997E-04 (187)	1.7005E-04 (73)	1.8098E-04 (73)	1.7230E-04 (73)	1.5358E-04 (87)
28	2.2049E-04 (187)	1.8050E-04 (73)	1.7699E-04 (73)	1.5595E-04 (73)	1.3226E-04 (119)
29	2.0440E-04 (187)	1.4887E-04 (188)	1.5580E-04 (177)	1.7909E-04 (177)	1.8428E-04 (177)
30	2.0655E-04 (120)	1.8629E-04 (120)	2.0542E-04 (120)	1.9818E-04 (120)	1.7503E-04 (137)
31	2.1542E-04 (258)	2.0848E-04 (243)	2.5155E-04 (243)	2.5968E-04 (243)	2.3086E-04 (243)
32	2.2560E-04 (258)	1.9775E-04 (244)	2.0906E-04 (261)	1.9900E-04 (261)	1.7603E-04 (258)
33	1.7382E-04 (112)	1.7479E-04 (6)	1.8901E-04 (6)	1.7672E-04 (6)	1.4389E-04 (6)
34	1.4646E-04 (112)	1.5708E-04 (325)	1.7386E-04 (325)	1.7223E-04 (311)	1.6120E-04 (311)
35	1.7960E-04 (200)	1.4409E-04 (200)	1.3837E-04 (200)	1.2605E-04 (200)	1.2404E-04 (201)
36	2.5934E-04 (201)	1.8014E-04 (200)	2.1252E-04 (200)	2.1034E-04 (200)	1.7762E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
120	1.2618E-04	30	2.75
261	1.2595E-04	31	2.75
177	1.2082E-04	29	5.23
57	1.1893E-04	8	2.75
56	1.1661E-04	5	2.75
62	1.1151E-04	10	3.65
77	1.0879E-04	32	2.07
96	1.0786E-04	11	3.65
137	1.0749E-04	32	3.65
335	1.0727E-04	8	2.75
187	1.0707E-04	29	1.17
94	1.0657E-04	11	2.75
14	1.0577E-04	8	3.65
7	1.0514E-04	8	3.65
37	1.0474E-04	8	3.65
26	1.0435E-04	8	2.75
103	1.0383E-04	12	1.17
188	1.0189E-04	29	1.17
267	1.0115E-04	25	2.75
200	1.0001E-04	16	2.75

PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

1975 DATA MAXIMUM LOAD SEWARD

STACK # 1--SEWARD STACK 1 - MAXIMUM LOAD SRC-SO2
STACK # 2--SEWARD STACK 2 - MAXIMUM LOAD SRC-SO2

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	114.00	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	179.00	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 INO= 1 JDAY= 7
ISTAB= 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4
AWS= 7.6 7.6 9.4 8.5 9.4 8.5 8.5 8.1 9.4 8.9 8.9 9.4 7.2 4.0 4.0 4.5 3.6 5.4 6.3 8.1 8.1 6.3 6.3 6.3
TEMP= 273. 273. 273. 273. 273. 273. 273. 273. 273. 274. 274. 275. 276. 277. 277. 277. 277. 276. 276. 277. 277. 277. 277. 277.
AFV= 59. 71. 80. 83. 82. 81. 85. 83. 77. 82. 83. 89. 86. 82. 82. 71. 38. 5. 2. 18. 23. 26. 6. 357.
AFVR= 59. 71. 80. 83. 82. 84. 85. 83. 77. 82. 83. 89. 86. 82. 82. 71. 38. 5. 2. 18. 23. 26. 6. 357.
HLHI= 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800.
1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800.

JYR=75 INO= 1 JDAY= 14
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 1 2 3 3 3 3 3 3 3
AWS= 7.6 8.9 8.1 7.6 7.6 8.1 8.9 10.3 8.9 6.7 6.7 8.5 8.5 8.5 8.1 8.1 7.6 8.1 9.4 9.4 8.5 8.1 8.9 9.4
TEMP= 260. 260. 259. 259. 259. 259. 258. 258. 258. 259. 259. 259. 259. 260. 260. 260. 260. 260. 260. 259. 260. 260. 260. 260.
AFV= 101. 90. 88. 79. 84. 81. 75. 76. 71. 77. 80. 81. 87. 84. 81. 85. 81. 85. 84. 80. 75. 73. 72. 70.
AFVR= 101. 90. 88. 79. 84. 81. 75. 76. 71. 77. 80. 81. 87. 84. 81. 85. 81. 85. 84. 80. 75. 73. 72. 70.
HLHI= 959. 959. 959. 959. 959. 959. 1013. 1067. 1121. 1175. 1228. 1282.
1336. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390.

JYR=75 INO= 1 JDAY= 26
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 3 3 3 3
AWS= 11.2 11.6 12.1 13.0 13.9 13.9 14.8 16.1 14.8 15.2 15.6 15.6 15.2 14.8 15.2 16.5 14.3 16.1 13.9 13.0 13.9 13.0 12.5 11.6
TEMP= 271. 271. 271. 271. 270. 270. 270. 269. 269. 269. 269. 269. 269. 269. 268. 267. 267. 267. 267. 267. 267. 266. 266. 266.
AFV= 75. 72. 71. 65. 82. 77. 76. 78. 73. 75. 80. 78. 86. 85. 88. 88. 91. 92. 88. 88. 86. 88. 87. 87.
AFVR= 75. 72. 71. 65. 82. 77. 76. 78. 73. 75. 80. 78. 86. 85. 88. 88. 91. 92. 88. 88. 86. 88. 87. 87.
HLHI= 566. 566. 566. 566. 566. 566. 598. 629. 661. 693. 725. 756.
788. 820. 820. 820. 820. 820. 820. 820. 820. 820. 820. 820.

JYR=75 INO= 2 JDAY= 37
ISTAB= 3 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 8.1 8.5 8.5 9.8 11.2 11.2 10.3 9.4 10.3 10.7 10.7 10.3 10.3 8.5 8.1 7.6 6.7 7.2 6.7 6.3 6.7 6.7 7.6 7.2
TEMP= 272. 272. 273. 274. 274. 274. 273. 273. 272. 271. 271. 271. 271. 271. 271. 271. 271. 271. 271. 271. 270. 270. 270. 270.
AFV= 69. 67. 67. 73. 76. 80. 85. 92. 88. 88. 83. 82. 86. 87. 85. 88. 92. 91. 93. 92. 86. 85. 91. 97.
AFVR= 69. 67. 67. 73. 76. 80. 85. 92. 88. 88. 83. 82. 86. 87. 85. 88. 92. 91. 93. 92. 86. 85. 91. 97.
HLHI= 1130. 1100. 1100. 1100. 1100. 1100. 1094. 1088. 1081. 1075. 1069. 1063.
1056. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050.

```
JYR=75 IMO= 2 JDAY= 56
ISTAB=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS= 10.7  8.5  7.2  7.2  8.9 10.7 10.7  9.8 12.5 13.4 15.2 15.2 13.0 13.4 16.5 16.1 16.5 16.5 18.3 18.3 16.1 17.9 20.1 19.2
TEMP= 271. 271. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 271. 271. 271. 271. 271. 271. 272. 271. 271. 272. 272. 273.
AFV=   93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
AFVR=  93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
HLHI= 1700. 1700. 1700. 1700. 1700. 1700. 1609. 1518. 1426. 1335. 1244. 1153.
      1061.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.


JYR=75 IMO= 2 JDAY= 57
ISTAB=  3    3    3    3    3    3    3    3    3    3    3    2    2    3    2    3    3    3    3    3    3    3    3    3
AWS= 19.2 17.4 17.9 16.1 15.2 15.9 13.9 13.9 14.3 16.1 16.5 16.1 15.6 17.0 16.5 15.6 14.3 13.9 13.0 12.5 13.4 13.4 12.1 11.6
TEMP= 272. 271. 271. 271. 271. 271. 270. 270. 270. 271. 272. 273. 274. 274. 275. 275. 274. 274. 274. 273. 273. 273. 272. 272.
AFV=   82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
AFVR=  82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
HLHI= 2000. 2000. 2000. 2000. 2000. 2000. 1968. 1935. 1903. 1870. 1838. 1805.
      1773. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740.


JYR=75 IMO= 3 JDAY= 62
ISTAB=  3    3    3    3    3    3    3    3    3    2    1    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS=  9.8  9.4  8.5  8.9  8.9  9.8 10.3  9.4  9.4  9.8 10.3 10.7 11.6 11.6 12.1 10.3 10.3 11.2 12.1 10.7 12.5 12.1 10.3  9.8
TEMP= 263. 263. 262. 262. 263. 262. 262. 262. 262. 263. 264. 264. 265. 265. 264. 264. 265. 264. 264. 264. 264. 263. 263. 263.
AFV=  118. 118. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
AFVR= 118. 118. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
HLHI= 1050. 1050. 1050. 1050. 1050. 1050. 1174. 1298. 1421. 1545. 1669. 1793.
      1916. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040.


JYR=75 IMO= 3 JDAY= 77
ISTAB=  4    3    3    3    3    3    3    3    3    2    1    1    1    1    1    2    3    3    3    3    3    3    3    3
AWS=  9.4 10.3  8.9 11.2 13.9 12.5 15.2 14.3 12.5 13.4 15.6 13.0 12.1 13.0 13.4 11.2 14.8 14.3 17.0 18.3 13.9 13.0 13.0 13.4
TEMP= 277. 277. 276. 276. 275. 275. 275. 275. 275. 276. 277. 279. 279. 280. 280. 281. 280. 278. 277. 276. 276. 275. 275. 276.
AFV=  312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
AFVR= 312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
HLHI=  100.  100.  100.  100.  100.  100.  250.  400.  550.  700.  850. 1000.
      1150. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.


JYR=75 IMO= 4 JDAY= 94
ISTAB=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    1    3    3    3    3    3    3    3    3    3
AWS= 15.6 18.8 17.0 17.9 17.9 17.0 15.6 14.8 15.6 11.2 13.0 10.3 11.6 11.2 13.0 12.1 12.1 11.6 11.2 11.2 10.7 10.7 11.2 11.2
TEMP= 266. 266. 265. 265. 265. 265. 265. 264. 265. 265. 266. 266. 268. 269. 270. 270. 269. 268. 266. 266. 266. 266. 265. 265.
AFV=  115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
AFVR= 115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
HLHI= 1000. 1000. 1000. 1000. 1000. 1000. 1106. 1213. 1319. 1425. 1531. 1638.
      1744. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.


JYR=75 IMO= 4 JDAY= 96
ISTAB=  3    3    3    3    3    3    3    3    2    1    1    1    1    1    1    1    2    2    3    3    3    3    3    3
AWS=  6.3  8.1  8.1  7.2  8.1  8.1  8.5  9.4  9.8  9.4  9.8  9.4  9.8 11.2 10.3 11.2 11.6 10.7  8.9  9.8  9.8  8.9  7.6  6.3
TEMP= 266. 267. 267. 266. 266. 267. 267. 267. 268. 269. 270. 271. 271. 272. 272. 272. 271. 271. 270. 269. 268. 268. 267. 268.
AFV=  120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 118. 120.
AFVR= 120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 118. 120.
HLHI=  336.  336.  336.  336.  336.  336.  444.  552.  660.  768.  876.  984.
      1092. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200.
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JYR=75 IMO= 4 JDAY=103
ISTAB=  4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.6  3.1  3.1  2.7  2.2  1.8  1.8  1.3  2.7  3.6  4.5  5.4  6.3  6.3  6.3  6.7  6.7  5.4  4.9  4.0  4.0  3.6  3.6  3.6
TEMP= 270. 270. 270. 270. 270. 270. 271. 271. 272. 273. 275. 276. 277. 277. 277. 277. 277. 276. 275. 274. 274. 272. 272. 272.
AFV=  190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
AFVR= 190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
HLH1=  778.  778.  778.  778.  778.  778. 1029. 1279. 1529. 1779. 2029. 2280.
      2530. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780.


JYR=75 IMO= 4 JDAY=120
ISTAB=  3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    2    3    3    3    3    3    3
AWS=  9.4  9.8 10.3  9.8 10.7  9.8 10.3 11.2 11.2 10.7 10.3 11.2 11.2  9.4 11.6 11.6 11.2 10.7 10.3  9.4  9.8 11.2 12.1 12.5
TEMP= 280. 280. 281. 281. 280. 280. 281. 281. 282. 284. 284. 285. 284. 285. 284. 284. 284. 283. 282. 282. 282. 282. 282. 282.
AFV=  310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
AFVR= 310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
HLH1=  600.  600.  600.  600.  600.  600.  600.  600.  720.  840.  950. 1060. 1170.
      1280. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.


JYR=75 IMO= 5 JDAY=137
ISTAB=  4    4    4    4    4    4    3    3    3    3    2    2    2    3    3    3    3    3    3    3    3    3    3    3
AWS=  6.3  6.7 10.3  8.5  6.3  5.8  6.7  7.2  5.8  6.3  6.7  7.6  8.1  7.6  8.1  8.1  9.8  8.9  8.5  8.1  8.5  9.4  9.8  9.4
TEMP= 285. 285. 284. 284. 285. 284. 285. 286. 287. 289. 290. 291. 291. 291. 291. 290. 289. 289. 288. 287. 287. 286. 286. 286.
AFV=  275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
AFVR= 275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
HLH1=  100.  100.  100.  100.  100.  100.  234.  368.  501.  635.  769.  903.
      1036. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170.


JYR=75 IMO= 6 JDAY=177
ISTAB=  4    3    3    4    4    4    4    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    3    3
AWS=  5.8  4.9  4.5  4.0  4.9  5.4  5.4  6.7  5.8  5.4  4.9  5.8  6.7  5.4  5.4  5.8  5.8  4.9  5.8  6.7  7.2  7.6  7.2  4.9
TEMP= 291. 291. 291. 291. 291. 291. 291. 290. 290. 290. 291. 290. 290. 290. 290. 291. 292. 291. 290. 289. 290. 289. 289. 289.
AFV=  290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
AFVR= 290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
HLH1=  100.  100.  100.  100.  100.  100.  189.  278.  366.  455.  544.  633.
       721.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.


JYR=75 IMO= 7 JDAY=187
ISTAB=  4    4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  3.6  3.6  3.1  3.1  3.1  3.1  4.0  4.5  2.7  4.0  4.5  4.5  4.0  4.5  4.0  3.6  4.0  4.5  4.9  5.4  6.3  5.4  5.4  4.5
TEMP= 293. 292. 292. 291. 291. 291. 291. 292. 294. 295. 296. 297. 298. 298. 299. 299. 299. 297. 296. 295. 294. 294. 293. 292.
AFV=  300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
AFVR= 300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
HLH1=  389.  389.  389.  389.  389.  389.  571.  754.  937. 1119. 1302. 1485.
      1667. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.


JYR=75 IMO= 7 JDAY=188
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  4.5  3.6  4.0  2.2  2.2  4.0  5.8  4.0  3.6  2.7  2.7  4.5  5.8  4.9  4.9  5.8  4.9  4.9  4.5  4.0  3.1  4.0  4.9  4.0
TEMP= 292. 291. 291. 290. 290. 289. 290. 291. 292. 294. 296. 296. 296. 296. 296. 295. 294. 294. 294. 293. 292. 291. 291. 289.
AFV=  310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
AFVR= 310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
HLH1=  450.  450.  450.  450.  450.  450.  556.  663.  769.  875.  981. 1088.
      1194. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.
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JYR=75 IMO= 7 JDAY=200
ISTAR=  4    4    4    4    4    3    3    1    3    2    1    1    1    2    2    2    1    3    3    3    3    4    4    4
AWS=  6.7  8.9  8.9  8.9  9.8 10.3 10.3  9.4  9.4  9.4  8.1  8.9  8.1  8.9  9.4  8.9  8.9  7.6  8.9  6.7  6.7  8.1  8.9  9.8
TEMP= 292. 292. 292. 292. 292. 292. 293. 294. 294. 294. 296. 297. 297. 299. 299. 299. 299. 298. 297. 297. 297. 295. 296. 296.
AFV=  350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.
AFVR= 350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.
HLHI= 1100. 1100. 1100. 1100. 1100. 1100. 1154. 1208. 1261. 1315. 1369. 1423.
      1476. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530.


JYR=75 IMO= 9 JDAY=261
ISTAR=  3    4    4    4    3    4    4    4    3    3    3    3    3    3    3    3    3    3    3    3    3    3    4
AWS=  8.5  9.8 10.7  9.8 10.7 11.2 12.5 12.5 12.1 11.6 14.3 14.3 15.2 13.9 13.9 13.9 13.4 12.5 11.6 12.1 11.2 11.6 10.7  9.4
TEMP= 287. 286. 287. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 287. 287. 287. 287. 287. 287. 287. 287.
AFV=  315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
AFVR= 315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
HLHI=  600.  600.  600.  600.  600.  600.  571.  543.  514.  485.  456.  428.
       399.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.


JYR=75 IMO= 9 JDAY=267
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS=  9.4 10.7 11.6 13.4  9.8  8.1  8.9 10.7 10.3 10.3 10.7  9.4  8.9  8.5  9.4 10.7 10.7  9.8 10.7  9.8 11.2 10.3 10.3 10.3
TEMP= 282. 282. 282. 282. 281. 282. 281. 282. 282. 282. 282. 282. 282. 283. 282. 282. 282. 282. 282. 283. 283. 283. 284. 283.
AFV=  248. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
AFVR= 248. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
HLHI= 1400. 1400. 1400. 1400. 1400. 1400. 1245. 1090.  935.  780.  625.  470.
       315.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.


JYR=75 IMO=12 JDAY=335
ISTAR=  3    3    3    3    2    3    3    3    3    3    2    2    2    2    2    3    3    3    3    3    4    4    4    4
AWS= 14.3 14.8 12.5 12.5 15.2 14.8 12.1 12.5 13.9 13.9 15.2 13.9 11.6 13.4 10.7  9.8  9.4  7.6  7.6  7.6  8.9  6.7  5.8  4.9
TEMP= 279. 276. 274. 272. 271. 270. 269. 269. 269. 268. 268. 269. 269. 269. 270. 269. 268. 268. 283. 283. 283. 283. 283. 283.
AFV=   87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
AFVR=  87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
HLHI= 1800. 1800. 1800. 1800. 1800. 1800. 1775. 1750. 1725. 1700. 1675. 1650.
      1625. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600.

YEAR BASED ON  20. DAYS
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PENN. ELEC. SEWARD

NOM--SO2

MAXIMUM MEAN CONC= 6.9523E-05 DIRECTION= 8 DISTANCE= 2.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	4.63042E-05	4.55996E-05	4.53714E-05	4.52207E-05	4.51110E-05
2	4.52833E-05	4.51001E-05	4.50560E-05	4.50309E-05	4.50147E-05
3	4.50435E-05	4.50154E-05	4.50278E-05	4.50811E-05	4.51822E-05
4	4.50576E-05	4.50612E-05	4.50381E-05	4.50188E-05	4.50058E-05
5	4.65270E-05	4.93808E-05	4.98131E-05	4.94433E-05	4.83935E-05
6	4.60287E-05	4.72466E-05	4.74669E-05	4.73152E-05	4.68107E-05
7	4.96005E-05	5.45683E-05	5.56393E-05	5.51261E-05	5.30564E-05
8	5.41838E-05	6.60380E-05	6.95233E-05	6.91183E-05	6.46850E-05
9	4.88516E-05	4.97924E-05	5.02467E-05	5.01294E-05	4.92307E-05
10	5.03154E-05	5.29124E-05	5.35647E-05	5.30045E-05	5.12356E-05
11	5.26456E-05	5.48026E-05	5.54626E-05	5.48195E-05	5.27728E-05
12	5.09190E-05	5.03966E-05	5.02828E-05	4.98569E-05	4.89340E-05
13	4.80596E-05	4.67633E-05	4.62898E-05	4.59165E-05	4.55692E-05
14	4.60647E-05	4.54661E-05	4.52806E-05	4.51635E-05	4.50802E-05
15	4.52306E-05	4.50884E-05	4.50498E-05	4.50271E-05	4.50122E-05
16	4.50294E-05	4.50095E-05	4.50049E-05	4.50024E-05	4.50010E-05
17	4.50021E-05	4.50005E-05	4.50002E-05	4.50001E-05	4.50000E-05
18	4.50001E-05	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05
19	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05
20	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05
21	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05	4.50000E-05
22	4.50046E-05	4.50107E-05	4.50080E-05	4.50044E-05	4.50014E-05
23	4.51362E-05	4.57891E-05	4.60366E-05	4.60688E-05	4.58856E-05
24	4.52489E-05	4.61743E-05	4.64194E-05	4.63758E-05	4.60887E-05
25	4.56710E-05	4.78392E-05	4.84272E-05	4.83308E-05	4.76683E-05
26	4.57752E-05	4.62947E-05	4.64101E-05	4.63072E-05	4.60222E-05
27	4.71054E-05	4.62349E-05	4.59122E-05	4.56566E-05	4.54247E-05
28	5.02453E-05	4.80491E-05	4.72679E-05	4.67574E-05	4.63002E-05
29	5.43668E-05	5.25209E-05	5.26900E-05	5.28824E-05	5.22587E-05
30	5.60485E-05	5.41151E-05	5.31994E-05	5.19805E-05	5.02000E-05
31	5.46164E-05	5.50073E-05	5.43342E-05	5.29175E-05	5.08105E-05
32	5.14146E-05	5.45914E-05	5.51073E-05	5.43109E-05	5.22604E-05
33	4.66095E-05	4.57433E-05	4.54523E-05	4.52617E-05	4.51314E-05
34	4.58343E-05	4.57600E-05	4.58475E-05	4.58476E-05	4.57080E-05
35	4.68695E-05	4.61917E-05	4.59575E-05	4.57424E-05	4.55022E-05
36	4.78587E-05	4.79563E-05	4.80361E-05	4.78044E-05	4.71827E-05

PENN. ELEC. BEHARD

NOX--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.4388E-04 DIRECTION= 80. DISTANCE= 2.1 KM DAY= 57.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.1082E-05 (200)	5.6991E-05 (200)	5.2428E-05 (200)	4.9415E-05 (200)	4.7220E-05 (200)
2	5.0665E-05 (200)	4.7001E-05 (200)	4.6117E-05 (200)	4.5612E-05 (200)	4.5288E-05 (200)
3	4.5870E-05 (200)	4.5259E-05 (200)	4.5422E-05 (7)	4.6553E-05 (7)	4.8616E-05 (7)
4	4.6068E-05 (56)	4.6205E-05 (56)	4.5751E-05 (56)	4.5365E-05 (56)	4.5109E-05 (56)
5	7.5098E-05 (56)	1.3231E-04 (56)	1.4107E-04 (56)	1.3377E-04 (56)	1.1284E-04 (56)
6	5.4045E-05 (56)	6.8799E-05 (56)	7.1554E-05 (56)	7.0236E-05 (56)	6.4986E-05 (56)
7	7.6679E-05 (57)	1.0623E-04 (26)	1.0997E-04 (26)	1.0353E-04 (14)	9.7382E-05 (14)
8	1.0708E-04 (335)	1.4388E-04 (57)	1.4375E-04 (57)	1.3334E-04 (335)	1.1410E-04 (37)
9	7.3536E-05 (335)	6.9573E-05 (335)	7.9220E-05 (37)	8.8339E-05 (37)	8.7459E-05 (37)
10	8.1926E-05 (96)	1.1315E-04 (62)	1.2875E-04 (62)	1.2870E-04 (62)	1.1290E-04 (62)
11	1.0967E-04 (96)	1.0848E-04 (94)	1.1523E-04 (96)	1.1637E-04 (96)	1.0689E-04 (96)
12	1.1154E-04 (103)	8.2329E-05 (103)	8.0454E-05 (94)	7.8967E-05 (94)	7.2535E-05 (96)
13	9.4155E-05 (103)	7.0167E-05 (103)	6.1233E-05 (103)	5.5081E-05 (103)	5.0356E-05 (94)
14	6.4530E-05 (103)	5.3736E-05 (103)	5.0294E-05 (103)	4.8104E-05 (103)	4.6529E-05 (103)
15	4.9455E-05 (103)	4.6732E-05 (103)	4.5979E-05 (103)	4.5535E-05 (103)	4.5241E-05 (103)
16	4.5581E-05 (103)	4.5188E-05 (103)	4.5097E-05 (103)	4.5048E-05 (103)	4.5019E-05 (103)
17	4.5043E-05 (103)	4.5011E-05 (103)	4.5005E-05 (103)	4.5002E-05 (103)	4.5001E-05 (103)
18	4.5001E-05 (103)	4.5000E-05 (103)	4.5000E-05 (103)	4.5000E-05 (103)	4.5000E-05 (103)
19	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)
20	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)
21	4.5000E-05 (267)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)	4.5000E-05 (7)
22	4.5092E-05 (267)	4.5214E-05 (267)	4.5161E-05 (267)	4.5088E-05 (267)	4.5028E-05 (267)
23	4.7718E-05 (267)	6.0780E-05 (267)	6.5732E-05 (267)	6.6375E-05 (267)	6.2711E-05 (267)
24	4.9828E-05 (267)	6.8443E-05 (267)	7.3367E-05 (267)	7.2508E-05 (267)	6.6771E-05 (267)
25	5.6672E-05 (267)	1.0115E-04 (267)	1.1320E-04 (267)	1.1144E-04 (267)	9.8291E-05 (267)
26	5.2411E-05 (187)	6.6187E-05 (267)	7.0439E-05 (267)	6.9574E-05 (267)	6.4677E-05 (267)
27	6.9601E-05 (187)	5.7199E-05 (187)	5.2654E-05 (187)	5.0943E-05 (267)	4.9743E-05 (267)
28	9.6625E-05 (187)	7.4151E-05 (187)	6.4242E-05 (187)	5.7201E-05 (177)	5.8421E-05 (177)
29	1.1356E-04 (187)	9.0941E-05 (187)	1.1264E-04 (177)	1.3561E-04 (177)	1.4037E-04 (177)
30	1.2066E-04 (120)	1.3438E-04 (120)	1.3700E-04 (120)	1.2818E-04 (120)	1.0805E-04 (120)
31	8.6783E-05 (120)	1.2956E-04 (261)	1.3647E-04 (261)	1.2765E-04 (261)	1.0671E-04 (261)
32	1.0563E-04 (77)	1.2532E-04 (77)	1.2103E-04 (77)	1.2057E-04 (137)	1.0795E-04 (137)
33	6.4074E-05 (77)	5.3242E-05 (77)	4.9944E-05 (77)	4.7888E-05 (77)	4.6517E-05 (77)
34	5.5961E-05 (200)	5.8239E-05 (200)	6.0869E-05 (200)	6.1356E-05 (200)	5.8861E-05 (200)
35	8.1635E-05 (200)	6.8621E-05 (200)	6.4044E-05 (200)	5.9794E-05 (200)	5.5020E-05 (200)
36	1.0211E-04 (200)	1.0411E-04 (200)	1.0572E-04 (200)	1.0109E-04 (200)	8.8652E-05 (200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.5322E-04 DIRECTION= 0. DISTANCE= 1.2 KM DAY=200. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.4853E-04 (200)	9.2763E-05 (200)	7.4533E-05 (200)	6.2644E-05 (200)	5.3919E-05 (200)
2	8.2388E-05 (200)	5.8498E-05 (200)	5.2718E-05 (200)	4.9341E-05 (200)	4.7113E-05 (200)
3	5.1847E-05 (200)	4.7057E-05 (200)	4.8377E-05 (7)	5.7427E-05 (7)	7.3925E-05 (7)
4	4.7990E-05 (56)	4.7397E-05 (56)	4.6359E-05 (56)	4.5673E-05 (56)	4.5208E-05 (56)
5	1.2847E-04 (56)	2.1809E-04 (56)	2.1852E-04 (56)	2.0842E-04 (56)	1.7436E-04 (56)
6	7.7656E-05 (56)	1.0439E-04 (56)	1.0402E-04 (26)	1.0042E-04 (56)	9.3994E-05 (56)
7	1.5529E-04 (57)	2.1530E-04 (57)	2.1769E-04 (57)	2.0836E-04 (26)	1.8371E-04 (14)
8	2.0746E-04 (335)	2.1854E-04 (57)	2.2190E-04 (335)	2.1204E-04 (7)	1.9511E-04 (335)
9	1.6986E-04 (335)	1.5653E-04 (26)	1.8066E-04 (56)	2.0069E-04 (56)	1.9159E-04 (37)
10	1.8309E-04 (62)	2.1002E-04 (94)	2.1348E-04 (94)	2.0507E-04 (62)	1.8183E-04 (62)
11	2.2101E-04 (96)	2.1362E-04 (94)	2.1139E-04 (94)	2.0775E-04 (94)	1.9668E-04 (96)
12	2.1599E-04 (103)	1.4432E-04 (103)	1.5918E-04 (94)	1.5956E-04 (96)	1.4006E-04 (96)
13	1.7841E-04 (103)	1.1173E-04 (103)	1.0137E-04 (94)	9.9431E-05 (94)	8.7648E-05 (94)
14	1.1342E-04 (103)	7.5318E-05 (103)	6.3588E-05 (103)	5.6099E-05 (103)	5.0628E-05 (103)
15	6.4839E-05 (103)	5.2978E-05 (103)	4.9629E-05 (103)	4.7608E-05 (103)	4.6222E-05 (103)
16	4.8181E-05 (103)	4.6085E-05 (103)	4.5574E-05 (103)	4.5294E-05 (103)	4.5121E-05 (103)
17	4.5274E-05 (103)	4.5073E-05 (103)	4.5034E-05 (103)	4.5015E-05 (103)	4.5005E-05 (103)
18	4.5012E-05 (103)	4.5002E-05 (103)	4.5001E-05 (103)	4.5000E-05 (103)	4.5000E-05 (103)
19	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)
20	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000F-05 (335)	4.5000E-05 (335)
21	4.5000E-05 (267)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)	4.5000E-05 (335)
22	4.5477E-05 (267)	4.5981E-05 (267)	4.5812E-05 (267)	4.5468E-05 (267)	4.5158E-05 (267)
23	5.8897E-05 (267)	1.1652E-04 (267)	1.4915E-04 (267)	1.5904E-04 (267)	1.4364E-04 (267)
24	6.1543E-05 (267)	1.3714E-04 (267)	1.6096E-04 (267)	1.6032E-04 (267)	1.3746E-04 (267)
25	7.2767E-05 (267)	1.8936E-04 (267)	2.2204E-04 (267)	2.1849E-04 (267)	1.8905E-04 (267)
26	9.4609E-05 (187)	1.6325E-04 (267)	1.8661E-04 (267)	1.8156E-04 (267)	1.5505E-04 (267)
27	1.8237E-04 (187)	1.1552E-04 (187)	9.4134E-05 (267)	9.2130E-05 (267)	8.2814E-05 (177)
28	2.3790E-04 (187)	1.4773E-04 (187)	1.1209E-04 (187)	1.3042E-04 (177)	1.4611E-04 (177)
29	2.2064E-04 (187)	1.5896E-04 (188)	1.8699E-04 (177)	2.1470E-04 (177)	2.1974E-04 (137)
30	2.2657E-04 (120)	2.0667E-04 (120)	2.2680E-04 (120)	2.1822E-04 (120)	2.0219E-04 (120)
31	2.3218E-04 (137)	2.2621E-04 (261)	2.2964E-04 (261)	2.1716E-04 (120)	1.8456E-04 (137)
32	1.7313E-04 (77)	2.2065E-04 (77)	2.3086E-04 (261)	2.2294E-04 (137)	2.0050E-04 (77)
33	1.0759E-04 (77)	7.1059E-05 (77)	6.0731E-05 (77)	5.4274E-05 (77)	4.9846E-05 (200)
34	8.4447E-05 (200)	1.1725E-04 (200)	1.5191E-04 (200)	1.6435E-04 (200)	1.5034E-04 (200)
35	1.9265E-04 (200)	1.5432E-04 (200)	1.4770E-04 (200)	1.3382E-04 (200)	1.1032E-04 (200)
36	2.5322E-04 (200)	1.9617E-04 (200)	2.3030E-04 (200)	2.2672E-04 (200)	1.8994E-04

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
57	1.4388E-04	8	2.07
56	1.4107E-04	5	2.75
335	1.4095E-04	8	2.75
177	1.4037E-04	29	5.23
120	1.3700E-04	30	2.75
261	1.3647E-04	31	2.75
62	1.2875E-04	10	2.75
77	1.2532E-04	32	2.07
37	1.2527E-04	8	3.65
137	1.2057E-04	32	3.65
14	1.1901E-04	8	3.65
7	1.1825E-04	8	3.65
26	1.1671E-04	8	2.75
96	1.1637E-04	11	3.65
94	1.1484E-04	11	2.75
187	1.1356E-04	29	1.17
267	1.1320E-04	25	2.75
103	1.1154E-04	12	1.17
188	1.0791E-04	29	1.17
200	1.0572E-04	36	2.75

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT 1975

&NAM1
KSTL=4  IOR=1  IFAP,IPUN= 0 0
  IDATA,IMAX,IUNITS= 0 0 0
IOHGT= 2   WHGT= 91.0  PST= 1
NPOL= 2   JFAC= 1   INPUT= 2
NSEA= 1   FCONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=      13.0

DAY--  1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1     1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 775.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	760.0	750.0	750.0	970.0	1300.0
2	760.0	750.0	1120.0	825.0	960.0
3	755.0	750.0	740.0	800.0	1000.0
4	750.0	750.0	740.0	1100.0	1100.0
5	750.0	750.0	740.0	900.0	1060.0
6	740.0	745.0	1020.0	1160.0	1000.0
7	780.0	780.0	920.0	1000.0	1100.0
8	820.0	920.0	880.0	1060.0	800.0
9	860.0	830.0	720.0	1000.0	960.0
10	890.0	740.0	720.0	800.0	920.0
11	920.0	720.0	760.0	960.0	1020.0
12	850.0	740.0	720.0	1070.0	1000.0
13	780.0	720.0	960.0	1060.0	1000.0
14	750.0	740.0	1150.0	1020.0	1080.0
15	740.0	900.0	1020.0	800.0	1020.0
16	730.0	800.0	1060.0	780.0	940.0
17	730.0	900.0	1070.0	1010.0	720.0
18	740.0	960.0	1020.0	1020.0	900.0
19	740.0	820.0	720.0	800.0	780.0
20	740.0	760.0	970.0	720.0	1040.0
21	730.0	720.0	980.0	720.0	750.0
22	760.0	780.0	920.0	800.0	980.0
23	760.0	860.0	1100.0	1040.0	1020.0
24	760.0	840.0	1100.0	950.0	760.0
25	760.0	760.0	820.0	1100.0	900.0
26	760.0	780.0	840.0	1140.0	740.0
27	760.0	800.0	1080.0	1140.0	800.0
28	760.0	900.0	1040.0	1100.0	1200.0
29	780.0	1060.0	880.0	900.0	1400.0
30	780.0	1160.0	1060.0	1060.0	1400.0
31	790.0	1080.0	1100.0	1100.0	1100.0
32	805.0	1120.0	1040.0	1040.0	1100.0
33	795.0	1140.0	1020.0	1020.0	1100.0
34	805.0	1010.0	1020.0	1000.0	1400.0
35	770.0	1020.0	830.0	1000.0	1500.0
36	755.0	760.0	800.0	1040.0	1600.0

STACK # 1--KINGSTON STACKS#1-4, NORMAL POWER LOAD-COAL
STACK # 2--KINGSTON STACKS#5-9, NORMAL POWER LOAD-COAL

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NON	2088.00	0.00	76.20	4.27	10.90	416.00	156.09
2	NON	3196.00	0.00	91.44	5.03	10.50	414.00	208.65

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.07 1.09 1.24 1.13 1.07 1.04 0.91 0.74 0.91 0.99 0.91 1.07

YEAR BASED ON 365. DAYS

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOX--SO2

MAXIMUM MEAN CONC= 1.49842E-04 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	9.7 KM
1		9.46349E-05	8.75059E-05	7.14687E-05	4.94387E-05	3.54276E-05
2		9.86355E-05	8.40967E-05	6.38294E-05	4.81984E-05	3.73986E-05
3		1.06013E-04	9.01751E-05	7.24252E-05	5.85858E-05	4.54909E-05
4		1.07773E-04	9.15036E-05	6.87820E-05	5.19920E-05	4.09639E-05
5		9.20181E-05	7.79382E-05	6.07190E-05	4.80623E-05	3.87516E-05
6		6.33295E-05	5.35097E-05	4.21751E-05	3.49441E-05	3.10633E-05
7		4.27399E-05	3.71328E-05	3.13107E-05	2.65545E-05	2.36863E-05
8		3.41527E-05	3.01616E-05	2.65573E-05	2.49145E-05	2.21240E-05
9		3.24694E-05	2.73648E-05	2.28057E-05	2.12747E-05	1.91926E-05
10		3.34174E-05	2.79230E-05	2.33775E-05	2.19371E-05	1.99214E-05
11		3.34777E-05	2.78180E-05	2.32156E-05	2.17608E-05	1.94946E-05
12		3.43180E-05	2.85743E-05	2.56143E-05	2.62622E-05	2.37488E-05
13		3.89457E-05	3.14821E-05	2.76284E-05	2.68377E-05	2.28545E-05
14		5.06760E-05	4.02241E-05	3.41369E-05	3.20092E-05	2.67418E-05
15		6.79176E-05	5.33799E-05	4.53129E-05	4.23976E-05	3.31630E-05
16		8.08184E-05	6.65316E-05	7.03022E-05	7.23902E-05	5.35832E-05
17		7.25749E-05	5.93119E-05	5.02548E-05	4.58401E-05	3.69130E-05
18		5.01903E-05	4.15142E-05	3.40104E-05	2.80797E-05	2.31371E-05
19		3.33307E-05	2.88355E-05	2.43171E-05	2.09285E-05	1.89395E-05
20		2.79545E-05	2.68683E-05	2.33780E-05	1.94424E-05	1.75671E-05
21		3.04927E-05	3.22466E-05	2.96334E-05	2.53282E-05	2.18800E-05
22		3.44465E-05	3.82024E-05	3.62770E-05	3.13307E-05	2.80946E-05
23		3.44442E-05	3.98711E-05	3.93182E-05	3.32212E-05	2.99986E-05
24		3.00112E-05	3.57253E-05	3.66631E-05	3.15392E-05	2.95229E-05
25		2.53205E-05	2.97075E-05	3.12490E-05	2.88825E-05	2.58411E-05
26		2.31760E-05	2.61848E-05	2.54888E-05	2.13732E-05	1.91508E-05
27		2.32500E-05	2.64038E-05	2.63391E-05	2.31264E-05	2.21920E-05
28		2.32648E-05	2.67026E-05	2.65552E-05	2.25984E-05	2.04882E-05
29		2.16654E-05	2.46604E-05	2.39664E-05	2.06056E-05	1.92203E-05
30		1.95052E-05	2.22500E-05	2.31407E-05	2.03176E-05	1.86754E-05
31		1.81435E-05	1.97857E-05	2.13461E-05	1.99169E-05	1.85225E-05
32		1.95093E-05	1.97530E-05	1.88143E-05	1.70823E-05	1.61733E-05
33		2.66901E-05	2.75833E-05	2.50094E-05	2.08426E-05	1.89302E-05
34		4.01536E-05	4.39915E-05	4.03961E-05	3.00348E-05	2.44093E-05
35		5.50195E-05	5.97702E-05	5.34709E-05	4.00465E-05	3.27113E-05
36		1.49842E-04	1.48397E-04	1.21779E-04	7.95097E-05	5.23318E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOX--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.9514E-03 DIRECTION=360. DISTANCE= 1.3 KM DAY=315.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.0050E-03 (298)	6.7744E-04 (315)	5.1621E-04 (284)	1.6375E-04 (262)	2.2285E-04 (341)
2	1.2583E-03 (298)	9.8743E-04 (326)	5.8377E-04 (326)	4.0417E-04 (37)	4.3941E-04 (234)
3	1.1172E-03 (293)	7.2292E-04 (276)	6.2968E-04 (255)	9.9107E-04 (262)	6.3324E-04 (234)
4	1.2407E-03 (292)	8.3520E-04 (292)	6.0819E-04 (260)	6.5715E-04 (269)	3.8724E-04 (260)
5	1.3493E-03 (340)	9.8034E-04 (340)	6.1290E-04 (340)	7.2130E-04 (139)	4.5067E-04 (139)
6	9.9021E-04 (340)	6.3267E-04 (340)	4.5464E-04 (187)	3.1825E-04 (238)	2.8991E-04 (238)
7	6.9551E-04 (330)	4.3149E-04 (306)	3.3537E-04 (174)	3.7329E-04 (174)	2.4208E-04 (174)
8	8.2373E-04 (306)	5.6407E-04 (322)	4.0444E-04 (140)	1.1282E-04 (140)	6.8941E-04 (140)
9	9.4945E-04 (295)	4.7414E-04 (322)	3.1575E-04 (243)	3.0054E-04 (174)	2.6343E-04 (140)
10	9.4818E-04 (295)	5.2725E-04 (280)	4.5276E-04 (1)	4.1123E-04 (1)	3.3638E-04 (140)
11	8.5774E-04 (295)	9.0035E-04 (280)	6.3215E-04 (280)	4.0017E-04 (280)	2.8664E-04 (280)
12	7.9191E-04 (295)	7.2485E-04 (280)	5.3338E-04 (280)	5.4397E-04 (280)	4.5996E-04 (280)
13	8.9247E-04 (307)	6.6068E-04 (307)	4.4399E-04 (287)	6.9116E-04 (287)	4.9534E-04 (287)
14	1.0220E-03 (307)	7.0487E-04 (307)	5.4693E-04 (167)	6.4359E-04 (167)	5.3284E-04 (192)
15	1.2283E-03 (342)	7.5307E-04 (342)	5.4170E-04 (222)	5.1463E-04 (167)	4.5465E-04 (193)
16	1.5895E-03 (331)	1.1293E-03 (331)	1.1354E-03 (241)	1.4476E-03 (241)	9.4584E-04 (241)
17	1.3369E-03 (332)	1.0244E-03 (359)	7.7989E-04 (359)	9.5041E-04 (204)	6.3723E-04 (204)
18	1.0454E-03 (332)	6.8331E-04 (332)	3.8768E-04 (252)	3.8287E-04 (252)	2.6587E-04 (252)
19	6.2743E-04 (338)	4.5795E-04 (360)	2.4829E-04 (252)	3.0184E-04 (333)	2.2289E-04 (333)
20	5.2422E-04 (338)	3.8499E-04 (360)	2.4402E-04 (193)	1.5297E-04 (193)	1.1644E-04 (119)
21	6.1457E-04 (152)	7.1521E-04 (30)	6.1103E-04 (30)	3.8568E-04 (30)	2.3798E-04 (29)
22	9.3067E-04 (152)	6.2193E-04 (152)	4.8723E-04 (30)	4.2788E-04 (30)	4.2085E-04 (292)
23	7.6105E-04 (152)	6.1151E-04 (314)	4.7411E-04 (317)	3.8408E-04 (292)	5.3862E-04 (292)
24	7.0717E-04 (302)	8.4606E-04 (302)	5.9796E-04 (302)	3.9521E-04 (302)	3.0384E-04 (363)
25	5.7034E-04 (302)	6.3583E-04 (302)	4.0344E-04 (307)	4.4649E-04 (363)	5.5431E-04 (208)
26	4.6397E-04 (317)	4.1185E-04 (317)	2.8288E-04 (317)	1.6417E-04 (317)	1.3645E-04 (21)
27	4.5495E-04 (314)	4.1020E-04 (314)	3.3781E-04 (350)	2.4917E-04 (317)	2.9945E-04 (349)
28	6.1081E-04 (314)	5.7231E-04 (314)	4.0924E-04 (312)	2.7441E-04 (312)	1.5272E-04 (25)
29	4.5118E-04 (314)	4.0909E-04 (314)	2.8617E-04 (334)	2.3638E-04 (125)	1.7913E-04 (349)
30	3.0361E-04 (33)	3.3793E-04 (33)	2.9586E-04 (297)	1.6794E-04 (297)	1.2520E-04 (304)
31	3.4747E-04 (179)	3.0267E-04 (33)	2.8741E-04 (285)	1.9251E-04 (285)	2.1104E-04 (349)
32	3.8250E-04 (179)	2.6510E-04 (179)	1.4913E-04 (334)	1.0431E-04 (139)	1.3372E-04 (304)
33	3.3030E-04 (179)	2.7253E-04 (48)	2.6555E-04 (107)	2.0959E-04 (107)	1.6619E-04 (16)
34	4.2897E-04 (42)	4.0619E-04 (297)	4.6988E-04 (16)	1.3108E-04 (16)	2.1790E-04 (16)
35	5.8315E-04 (259)	4.7134E-04 (269)	3.9317E-04 (16)	2.5146E-04 (31)	2.9108E-04 (22)
36	1.9037E-03 (319)	1.9514E-03 (315)	1.2592E-03 (315)	6.2157E-04 (356)	3.3870E-04 (116)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

MOD--SO2

YEARLY MAXIMUM 3-HOUR CONC= 8.0517E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308, HOUR=1500.

HIGHEST 1-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	5.3146E-03 (421)	3.4925E-03 (262)	2.6629E-03 (341)	2.4126E-03 (341)	1.6912E-03 (341)
2	5.7862E-03 (293)	3.9541E-03 (326)	2.5302E-03 (341)	2.4263E-03 (341)	2.8049E-03 (244)
3	5.0121E-03 (255)	3.6046E-03 (276)	2.6249E-03 (294)	3.4478E-03 (294)	2.9912E-03 (234)
4	6.0053E-03 (242)	3.5985E-03 (6)	2.4433E-03 (260)	2.2497E-03 (260)	1.4251E-03 (161)
5	5.7252E-03 (325)	3.5228E-03 (275)	2.2381E-03 (301)	2.4628E-03 (139)	1.9742E-03 (111)
6	4.8360E-03 (320)	3.1185E-03 (320)	2.0171E-03 (187)	2.4523E-03 (238)	2.2276E-03 (238)
7	3.9835E-03 (253)	2.5512E-03 (322)	2.0837E-03 (207)	1.8519E-03 (209)	1.2094E-03 (209)
8	4.8235E-03 (295)	3.6056E-03 (322)	1.9369E-03 (180)	2.7391E-03 (214)	1.9077E-03 (140)
9	5.4141E-03 (295)	2.8582E-03 (322)	1.5462E-03 (322)	2.1153E-03 (174)	1.8764E-03 (174)
10	4.8344E-03 (295)	2.9707E-03 (236)	1.6610E-03 (306)	2.0415E-03 (1)	1.6810E-03 (1)
11	5.2253E-03 (301)	3.2904E-03 (280)	2.1533E-03 (280)	2.0368E-03 (330)	1.4858E-03 (267)
12	4.7162E-03 (301)	2.8296E-03 (280)	1.9081E-03 (280)	1.7252E-03 (217)	1.7408E-03 (280)
13	4.2122E-03 (291)	2.7364E-03 (291)	1.9364E-03 (295)	2.1771E-03 (192)	2.2112E-03 (192)
14	5.4076E-03 (290)	3.5693E-03 (290)	2.1785E-03 (251)	2.8313E-03 (251)	1.9118E-03 (251)
15	4.3961E-03 (309)	2.9036E-03 (217)	2.8084E-03 (240)	2.7565E-03 (217)	2.0899E-03 (193)
16	5.4187E-03 (331)	3.1695E-03 (256)	2.6223E-03 (230)	3.2754E-03 (244)	2.1966E-03 (243)
17	4.7104E-03 (190)	3.8008E-03 (359)	2.8275E-03 (359)	2.6621E-03 (231)	2.0510E-03 (342)
18	4.6142E-03 (353)	3.1916E-03 (281)	2.2285E-03 (281)	1.8454E-03 (252)	1.5290E-03 (20)
19	4.4039E-03 (338)	2.7587E-03 (338)	1.5001E-03 (281)	2.1361E-03 (333)	1.6058E-03 (333)
20	4.0086E-03 (338)	2.4454E-03 (338)	1.6040E-03 (280)	9.3625E-04 (347)	7.7408E-04 (358)
21	3.7447E-03 (333)	3.3429E-03 (333)	3.0852E-03 (30)	1.7613E-03 (29)	1.5848E-03 (29)
22	4.2476E-03 (152)	3.2571E-03 (206)	2.5525E-03 (232)	1.9030E-03 (282)	2.5438E-03 (282)
23	3.9571E-03 (343)	3.2588E-03 (314)	2.6100E-03 (232)	2.1272E-03 (282)	2.6465E-03 (282)
24	3.6332E-03 (302)	3.6041E-03 (302)	2.5143E-03 (302)	1.9684E-03 (127)	2.1853E-03 (283)
25	3.1707E-03 (302)	2.9580E-03 (302)	1.8060E-03 (302)	2.4777E-03 (363)	2.3401E-03 (363)
26	3.0227E-03 (317)	2.5104E-03 (317)	1.7563E-03 (265)	8.8013E-04 (349)	9.9951E-04 (21)
27	2.7530E-03 (314)	2.4029E-03 (314)	2.2748E-03 (350)	1.3072E-03 (350)	1.5291E-03 (349)
28	3.7661E-03 (314)	3.3956E-03 (314)	2.2511E-03 (312)	1.4447E-03 (312)	1.0656E-03 (232)
29	2.7650E-03 (314)	2.4958E-03 (334)	1.7081E-03 (334)	1.2888E-03 (125)	1.3338E-03 (349)
30	2.3377E-03 (33)	2.5704E-03 (33)	1.6747E-03 (285)	1.1780E-03 (46)	9.1059E-04 (304)
31	2.4494E-03 (179)	2.3129E-03 (33)	2.2051E-03 (285)	1.4491E-03 (285)	1.5373E-03 (349)
32	2.4549E-03 (179)	1.8095E-03 (179)	1.0775E-03 (334)	7.4345E-04 (139)	9.7473E-04 (304)
33	2.5389E-03 (179)	2.0892E-03 (48)	1.6164E-03 (107)	9.3093E-04 (333)	9.9847E-04 (311)
34	2.2983E-03 (48)	2.9517E-03 (48)	2.2497E-03 (16)	1.3917E-03 (16)	1.3565E-03 (289)
35	4.0551E-03 (264)	3.2144E-03 (264)	2.3978E-03 (16)	1.3391E-03 (164)	1.6936E-03 (304)
36	8.0517E-04 (308)	5.9312E-03 (319)	4.0208E-03 (356)	2.5423E-03 (183)	1.8580E-03 (146)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
315	1.9514E-03	36	1.33
319	1.9037E-03	36	0.71
308	1.7475E-03	36	0.71
311	1.5895E-03	16	0.71
356	1.5861E-03	36	1.33
222	1.4729E-03	16	0.71
241	1.4476E-03	16	4.65
284	1.4175E-03	36	0.71
355	1.3932E-03	36	1.33
340	1.3493E-03	5	0.71
342	1.3420E-03	16	0.71
332	1.3368E-03	17	0.71
231	1.3162E-03	16	0.71
354	1.2723E-03	36	0.71
218	1.2691E-03	16	0.71
298	1.2583E-03	2	0.71
292	1.2407E-03	4	0.71
321	1.1915E-03	36	0.71
17	1.1867E-03	36	0.71
195	1.1792E-03	36	0.71

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT-MAXIMUM POWER LOAD CONDITIONS-COAL

STACK 1 1--KINGSTON STACKS#1-4, MAX.LOAD
STACK 2 2--KINGSTON STACKS#5-9, MAX.LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOV	2937.00	0.00	76.20	4.27	13.26	427.30	304.20
2	NOV	4016.00	0.00	91.44	5.03	13.56	421.90	271.41

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.30 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IN= 6 JDAY=168
ISTAB= 4 4 4 4 4 4 4 4 4 3 2 1 1 1 3 4 3 4 4 4 4 4 4 4
AWS= 2.9 1.2 1.1 2.5 0.9 1.7 1.5 1.1 0.8 1.6 3.0 4.0 4.4 5.9 7.0 6.9 7.1 7.3 7.2 6.6 5.6 5.9 5.6 4.7
TEMP= 292. 292. 291. 291. 290. 290. 290. 290. 292. 294. 296. 298. 300. 301. 302. 302. 304. 303. 303. 302. 300. 299. 298. 296.
AFV= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 0. 30. 29. 30. 27. 25. 11. 26. 29. 51.
AFVR= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 0. 30. 29. 30. 27. 25. 11. 26. 29. 51.
MLHI= 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2058. 1992. 1906. 1830. 1754.
1678. 1602. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.

JYR=75 IN=12 JDAY=336
ISTAB= 4 4 4 4 4 4 4 4 4 4 1 1 1 1 1 1 2 3 4 4 4 4 4 4 4
AWS= 2.6 2.2 1.6 1.3 1.0 1.0 0.9 0.5 0.9 1.8 2.0 2.8 3.3 3.8 3.8 3.7 3.7 4.4 4.4 3.8 3.9 3.8 2.7 3.0
TEMP= 273. 272. 271. 271. 270. 270. 270. 269. 270. 272. 275. 278. 281. 282. 284. 284. 284. 283. 281. 279. 277. 277. 275. 275.
AFV= 208. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 0. 34. 38. 20. 15. 54. 60. 46. 51. 83.
AFVR= 208. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 0. 34. 38. 20. 15. 54. 60. 46. 51. 83.
MLHI= 305. 305. 305. 305. 305. 305. 305. 381. 457. 533. 609. 685.
761. 837. 914. 914. 914. 914. 914. 914. 914. 914. 914. 914.

JYR=76 IN= 1 JDAY= 4
ISTAB= 3 3 4 3 3 4 4 4 3 1 1 1 1 1 1 1 1 3 4 4 4 4 4 1 4
AWS= 5.3 7.2 7.6 7.3 8.7 7.9 7.7 6.4 6.1 5.4 6.2 7.5 6.2 5.7 6.3 6.4 5.9 6.4 6.7 8.1 6.6 7.1 6.7 6.0
TEMP= 272. 271. 270. 270. 268. 267. 266. 266. 266. 266. 267. 267. 268. 268. 270. 270. 271. 269. 268. 267. 267. 266. 266. 265.
AFV= 151. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 174. 170.
AFVR= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 174. 170.
MLHI= 400. 400. 400. 400. 400. 400. 400. 438. 476. 514. 552. 590.
628. 666. 710. 710. 710. 710. 710. 710. 710. 710. 710. 710.

JYR=76 IN= 1 JDAY= 4
ISTAB= 4 4 4 4 4 3 3 3 3 2 1 1 1 1 1 1 1 2 3 3 4 3 4 4 4
AWS= 7.2 8.0 10.6 11.0 10.3 11.2 10.7 8.2 8.0 9.3 9.2 9.0 6.6 6.9 5.8 7.5 7.2 7.7 8.8 8.9 8.8 8.2 8.1 8.1
TEMP= 276. 275. 273. 272. 271. 270. 269. 268. 268. 267. 267. 266. 267. 267. 267. 266. 266. 265. 264. 264. 263. 263. 262. 262.
AFV= 147. 142. 153. 158. 167. 160. 164. 163. 161. 163. 161. 161. 165. 167. 168. 174. 164. 150. 163. 161. 151. 150. 159. 159.
AFVR= 147. 142. 153. 158. 167. 160. 164. 163. 161. 163. 161. 161. 165. 167. 168. 174. 164. 150. 163. 161. 151. 150. 159. 159.
MLHI= 853. 854. 854. 853. 853. 853. 854. 858. 863. 868. 873. 878.
944. 954. 975. 975. 975. 975. 975. 975. 975. 975. 975. 975.

JYR=7[illegible]

```
ISTAR=  1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1    1
AWS= 10.1  8.7 10.4  9.3  7.2  8.9 10.2  8.9  7.7  8.2 10.2 10.6 10.5 10.1 10.2  9.1  8.1  8.1  6.1  5.7  6.1  5.5  4.6  5.7
TEMP= 273. 272. 272. 271. 270. 270. 269. 267. 267. 267. 267. 268. 268. 268. 268. 268. 267. 267. 267. 267. 266. 266. 265. 265.
AFV=  164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 165. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
AFVR= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 169. 170. 171. 185. 176.
HLHI=  400.  400.  400.  400.  400.  400.  400.  400.  427.  454.  481.  508.  545.
       562.  589.  617.  617.  617.  617.  617.  617.  617.  617.  617.  617.


JYR=76 IHO= 1 JDAY= 27
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    4    4    4    4    4    4    4
AWS=  6.4  5.2  6.4  7.2  7.6  8.0  8.1  8.9  9.8  8.4  8.1  7.5  8.2  7.5  8.1  6.7  8.0  7.2  5.7  3.9  2.8  2.3  4.2  6.3
TEMP= 275. 275. 275. 274. 274. 274. 274. 274. 273. 273. 273. 273. 273. 273. 273. 273. 272. 272. 272. 272. 271. 271. 270. 270.
AFV=  170. 167. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
AFVR= 170. 167. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
HLHI=  457.  457.  457.  457.  457.  457.  457.  521.  585.  649.  713.  777.
       841.  905.  975.  975.  975.  975.  975.  975.  975.  975.  975.  975.


JYR=76 IHO= 3 JDAY= 70
ISTAR=  4    4    4    4    4    4    4    4    3    3    3    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.1  4.3  4.1  3.5  3.6  4.4  3.3  2.7  1.4  0.9  1.7  2.4  2.6  2.6  2.5  4.0  4.4  3.8  3.9  3.8  1.2  1.0  0.5  0.7
TEMP= 276. 276. 275. 275. 274. 273. 273. 273. 274. 276. 278. 281. 283. 284. 285. 287. 287. 287. 286. 285. 283. 282. 280. 279.
AFV=  155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
AFVR= 155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IHO= 3 JDAY= 79
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    2    3    3    4    4    4    4    4    4
AWS=  1.5  2.7  3.3  2.5  2.0  2.7  3.2  3.9  3.2  4.8  4.4  4.5  5.0  6.3  5.0  6.3  6.9  5.6  5.9  6.7  6.8  6.8  5.1  4.8
TEMP= 271. 272. 271. 271. 271. 271. 271. 271. 273. 278. 282. 285. 288. 289. 291. 291. 291. 290. 289. 288. 287. 286. 284.
AFV=  268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
AFVR= 268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
HLHI=    0.    0.    0.    0.    0.    0.    0.  228.  456.  684.  912. 1140.
      1369. 1596. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829.


JYR=76 IHO= 3 JDAY= 84
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  3.5  3.9  4.3  4.6  3.5  3.7  1.8  1.6  2.3  3.2  6.4  6.5  7.0  7.7  7.3  7.4  8.5  6.5  6.9  5.3  5.5  6.7  5.1
TEMP= 279. 278. 277. 276. 276. 275. 275. 275. 278. 284. 287. 289. 291. 291. 291. 293. 293. 293. 291. 291. 291. 289. 286. 285.
AFV=   61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
AFVR=  61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0. 1249. 2498. 3747. 4996. 6245.
      7494. 8743. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999.


JYR=76 IHO= 4 JDAY= 94
ISTAR=  4    4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  1.8  1.3  0.9  1.6  1.6  1.6  0.6  0.4  0.9  1.5  2.2  2.7  4.2  5.3  5.6  5.1  5.6  4.9  5.1  5.9  5.6  5.9  7.6  5.9
TEMP= 281. 280. 279. 278. 277. 277. 276. 277. 280. 284. 288. 292. 295. 296. 298. 298. 298. 298. 297. 295. 293. 292. 291. 290.
AFV=   52.  35.  81.  56.  58.  64.  58. 226. 136.   4.   7.   7.   3.   5.  11.  40.  20.  27.  28.  54.  42.  46.  52.  51.
AFVR=  52.  35.  81.  56.  58.  64.  58. 226. 136.   4.   7.   7.   3.   5.  11.  40.  20.  27.  28.  54.  42.  46.  52.  51.
HLHI=  400.  400.  400.  400.  400.  400.  400.  537.  674.  811.  948. 1085.
      1222. 1359. 1496. 1496. 1496. 1496. 1496. 1496. 1496. 1496. 1496. 1496.
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ISTAR=  4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4    4
AWS=  4.5  4.1  5.1  4.1  3.9  3.5  3.3  3.0  2.5  2.4  2.3  2.5  2.1  2.0  1.0  3.3  3.4  4.6  3.7  3.7  3.4  3.0  4.1  4.1
TEMP= 279. 277. 276. 276. 275. 274. 274. 275. 279. 283. 286. 287. 289. 290. 291. 293. 293. 293. 293. 291. 288. 286. 284. 283.
AFV=  186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
AFVR= 186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
HLHI=   0.   0.   0.   0.   0.   0.   0.  186.  372.  558.  744.  930.
      1116. 1302. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493.


JYR=76 IMO= 4 JDAY=105
ISTAR=  4    4    4    4    4    4    4    2    4    2    1    1    1    1    2    1    1    2    4    4    4    4    4    4
AWS=  2.6  1.8  1.5  1.9  1.3  1.3  0.7  1.2  0.8  1.1  2.0  2.9  3.6  3.9  2.5  3.6  3.3  3.3  3.8  4.8  5.4  5.3  3.7  3.5
TEMP= 283. 283. 282. 280. 280. 280. 280. 281. 284. 288. 292. 295. 296. 297. 298. 299. 299. 298. 297. 295. 294. 293. 292. 291.
AFV=  124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
AFVR= 124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
HLHI=   0.   0.   0.   0.   0.   0.   0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IMO= 4 JDAY=107
ISTAR=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  3.4  3.6  3.6  2.5  1.7  0.8  0.6  2.2  2.3  2.4  3.9  6.1  6.4  5.5  4.1  4.3  4.0  2.8  3.6  4.2  3.3  3.3  4.0  4.3
TEMP= 284. 287. 286. 286. 286. 285. 285. 286. 289. 293. 295. 297. 298. 298. 299. 299. 299. 298. 298. 297. 295. 293. 292. 291.
AFV=   58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
AFVR=  58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
HLHI=  244.  244.  244.  244.  244.  244.  244.  491.  738.  985. 1232. 1479.
      1726. 1973. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225.


JYR=76 IMO= 4 JDAY=117
ISTAR=  3    3    3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    4    4    4    4    4    4
AWS=  5.6  6.3  4.3  4.8  5.1  5.2  4.8  5.1  4.2  4.3  3.7  4.2  5.7  6.4  5.9  4.6  5.1  5.9  4.3  4.2  4.5  1.9  1.7  2.3
TEMP= 282. 281. 281. 280. 280. 279. 278. 279. 279. 279. 279. 280. 281. 282. 283. 284. 285. 285. 284. 283. 282. 280. 279. 278.
AFV=  103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
AFVR= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
HLHI=  457.  457.  457.  457.  457.  457.  457.  590.  723.  856.  989. 1122.
      1255. 1388. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 4 JDAY=119
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.3  2.7  3.6  3.4  4.3  5.2  4.3  2.5  2.1  2.4  5.0  5.1  3.8  4.4  5.1  5.4  6.3  7.3  6.1  6.3  5.7  5.8  4.7  3.5
TEMP= 277. 277. 276. 276. 275. 275. 275. 277. 280. 282. 284. 286. 287. 288. 289. 290. 290. 289. 288. 287. 286. 285. 283. 282.
AFV=  226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
AFVR= 226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
HLHI=  914.  914.  914.  914.  914.  914.  914.  952.  990. 1028. 1066. 1104.
      1142. 1180. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219.


JYR=76 IMO= 5 JDAY=126
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.0  1.2  1.2  1.5  1.3  0.9  0.4  0.9  1.1  2.9  3.7  4.8  4.3  5.2  5.1  4.6  5.3  4.8  5.6  6.3  6.4  5.8  4.1  4.4
TEMP= 280. 279. 279. 279. 278. 278. 278. 280. 284. 287. 290. 293. 294. 295. 296. 297. 297. 296. 296. 294. 293. 290. 289. 288.
AFV=   42.  67.  60.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
AFVR=  42.  67.  60.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
HLHI=   0.   0.   0.   0.   0.   0.   0.  156.  312.  468.  624.  780.
      936. 1092. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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```
ISTAB=  [illegible]
AWS=  1.3  2.7  3.3  4.0  4.1  3.8  3.4  2.3  2.9  1.5  3.2  3.3  3.9  [illegible]  5.6  5.9  6.4  7.2  7.2  7.8  8.4  6.4  5.1  2.4
TEMP= 290. 290. 290. 290. 290. 290. 290. 290. 291. 291. 292. 292. 293. 292. 292. 291. 289. 287. 286. 285. 285. 284. 284. 284.
AFV=   65.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
AFVR=  66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
HLHI=  762.  762.  762.  762.  762.  762.  762.  800.  838.  876.  914.  952.
       990. 1028. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067.


JYR=76 IMO= 5 JDAY=140
ISTAB=  4    4    4    4    4    4    4    2    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.4  1.9  2.4  3.2  1.6  2.1  2.8  0.5  0.9  1.3  1.7  1.7  3.7  3.4  3.7  3.7  3.8  3.5  4.7  4.2  4.9  4.7  4.1  2.8
TEMP= 281. 280. 279. 279. 279. 278. 278. 281. 284. 287. 289. 290. 291. 292. 293. 294. 294. 294. 293. 292. 290. 288. 286. 285.
AFV=  177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
AFVR= 177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
HLHI=   40.   40.   40.   40.   40.   40.   40.  225.  410.  595.  780.  965.
      1150. 1335. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527.


JYR=76 IMO= 5 JDAY=141
ISTAB=  4    4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  2.1  1.9  1.9  0.9  1.2  1.2  0.7  0.9  1.3  2.6  3.1  3.0  2.9  3.1  2.3  3.1  3.1  3.2  4.4  4.7  3.6  2.3  2.7
TEMP= 283. 283. 282. 281. 280. 280. 280. 282. 286. 289. 292. 293. 294. 295. 296. 297. 297. 297. 297. 295. 292. 290. 289. 288.
AFV=  105. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
AFVR= 106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 359.  14.  10.  13.  40.  42.  50.  79. 102.  65.
HLHI=    0.    0.    0.    0.    0.    0.    0.  190.  380.  570.  760.  950.
      1140. 1330. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 5 JDAY=142
ISTAB=  4    4    4    4    4    4    4    4    2    2    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS=  2.5  2.2  2.6  2.5  1.6  0.7  0.5  0.8  0.8  1.1  2.2  2.0  2.7  2.9  2.5  2.9  2.2  3.0  2.5  2.8  4.8  3.3  3.3  3.8
TEMP= 286. 286. 285. 285. 284. 283. 283. 285. 288. 291. 294. 296. 297. 298. 298. 299. 299. 299. 298. 297. 294. 293. 291. 290.
AFV=   84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
AFVR=  84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
HLHI=    0.    0.    0.    0.    0.    0.    0.  171.  342.  513.  684.  855.
      1026. 1197. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372.


YEAR BASED ON  20. DAYS
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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

MUM--SO2

MAXIMUM MEAN CONC= 6.89196E-04 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	9.3 KM
1		3.34593E-04	2.79354E-04	2.06925E-04	1.14016E-04	6.42050E-05
2		2.61539E-04	1.95432E-04	1.39138E-04	8.82850E-05	5.29127E-05
3		2.13548E-04	1.47346E-04	1.00736E-04	6.63183E-05	4.01705E-05
4		2.06715E-04	1.43427E-04	9.28587E-05	5.25644E-05	3.53665E-05
5		1.80865E-04	1.29479E-04	8.32215E-05	5.47421E-05	4.48740E-05
6		1.09792E-04	7.67075E-05	5.04718E-05	3.13405E-05	2.23361E-05
7		4.61652E-05	3.24767E-05	2.33217E-05	1.75427E-05	1.49995E-05
8		1.95082E-05	1.61891E-05	1.42634E-05	1.36229E-05	1.56368E-05
9		1.37159E-05	1.32722E-05	1.30896E-05	1.30284E-05	1.30063E-05
10		1.31427E-05	1.30502E-05	1.42324E-05	1.80173E-05	1.82240E-05
11		1.41398E-05	1.34154E-05	1.31454E-05	1.30799E-05	1.30252E-05
12		2.09942E-05	1.63503E-05	1.47294E-05	1.79522E-05	1.99585E-05
13		5.19842E-05	3.09599E-05	2.30922E-05	2.96790E-05	2.93203E-05
14		1.48992E-04	8.20132E-05	4.63772E-05	4.07044E-05	3.85071E-05
15		3.38898E-04	1.98672E-04	1.19049E-04	8.14549E-05	5.76443E-05
16		4.71561E-04	3.04341E-04	2.62402E-04	2.54454E-04	1.79817E-04
17		3.85000E-04	2.36682E-04	1.69757E-04	1.33074E-04	9.52723E-05
18		2.01269E-04	1.16330E-04	7.44545E-05	4.66035E-05	3.07871E-05
19		7.86231E-05	4.82262E-05	3.39154E-05	2.33465E-05	1.82283E-05
20		2.93198E-05	2.26174E-05	1.96448E-05	1.63279E-05	1.46206E-05
21		1.58680E-05	1.49242E-05	1.46267E-05	1.67430E-05	1.80545E-05
22		1.33407E-05	1.32480E-05	1.31653E-05	1.30679E-05	1.30224E-05
23		1.30260E-05	1.30265E-05	1.30518E-05	1.30260E-05	1.30062E-05
24		1.30062E-05	1.31145E-05	1.39827E-05	1.39916E-05	1.34830E-05
25		1.30223E-05	1.32886E-05	1.59168E-05	1.64651E-05	1.51427E-05
26		1.31255E-05	1.32916E-05	1.41579E-05	1.40696E-05	1.35104E-05
27		1.35720E-05	1.40215E-05	1.42715E-05	1.37026E-05	1.33185E-05
28		1.44438E-05	1.58739E-05	1.69488E-05	1.55068E-05	1.43494E-05
29		1.49772E-05	1.70676E-05	1.88259E-05	1.68739E-05	1.51963E-05
30		1.44566E-05	1.59762E-05	1.69491E-05	1.55068E-05	1.43494E-05
31		1.36904E-05	1.40689E-05	1.42460E-05	1.36824E-05	1.33135E-05
32		1.43013E-05	1.34662E-05	1.34468E-05	1.31454E-05	1.30456E-05
33		2.00844E-05	1.78260E-05	1.53485E-05	1.37467E-05	1.42433E-05
34		4.25187E-05	3.55561E-05	2.66566E-05	1.84451E-05	1.50141E-05
35		1.06133E-04	4.05936E-05	6.44303E-05	3.58542E-05	2.35136E-05
36		6.89196E-04	6.17037E-04	4.44053E-04	2.28568E-04	1.18491E-04

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.7021E-03 DIRECTION=360. DISTANCE= 0.7 KM DAY=319.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	9.5556E-04 (298)	5.8774E-04 (308)	5.3535E-04 (356)	1.3571E-04 (356)	2.2738E-04 (355)
2	1.2089E-03 (298)	6.4741E-04 (298)	3.3023E-04 (308)	3.1520E-04 (292)	2.2912E-04 (292)
3	1.0309E-03 (298)	6.0055E-04 (298)	3.7122E-04 (298)	2.4114E-04 (298)	1.5129E-04 (195)
4	1.1298E-03 (292)	7.4922E-04 (292)	4.4614E-04 (340)	2.3275E-04 (340)	1.2549E-04 (340)
5	1.3939E-03 (340)	9.9759E-04 (340)	6.3762E-04 (340)	4.0308E-04 (340)	2.5058E-04 (340)
6	1.0004E-03 (340)	6.6205E-04 (340)	3.5123E-04 (340)	1.5548E-04 (340)	8.1412E-05 (340)
7	3.9318E-04 (340)	2.2659E-04 (340)	1.0540E-04 (340)	4.6726E-05 (340)	2.7897E-05 (321)
8	9.2957E-05 (340)	4.9976E-05 (340)	2.5941E-05 (340)	1.8971E-05 (321)	6.3591E-05 (321)
9	2.2104E-05 (340)	1.6245E-05 (340)	1.3850E-05 (340)	1.3223E-05 (331)	1.3042E-05 (340)
10	1.4831E-05 (342)	1.3561E-05 (342)	3.7469E-05 (331)	1.1331E-04 (331)	1.1747E-04 (331)
11	3.0584E-05 (342)	1.9985E-05 (342)	1.5354E-05 (342)	1.4185E-05 (342)	1.3424E-05 (342)
12	1.1170E-04 (342)	5.9960E-05 (342)	3.6708E-05 (342)	7.7631E-05 (331)	1.2790E-04 (331)
13	3.5391E-04 (342)	1.9601E-04 (342)	1.0845E-04 (342)	2.0582E-04 (331)	2.2314E-04 (331)
14	8.0115E-04 (342)	4.6632E-04 (342)	2.7513E-04 (342)	2.1307E-04 (331)	2.3641E-04 (331)
15	1.3079E-03 (342)	8.0437E-04 (342)	5.1918E-04 (222)	5.3579E-04 (222)	3.6173E-04 (222)
16	1.6337E-03 (222)	1.0720E-03 (331)	9.2702E-04 (241)	1.4656E-03 (241)	1.0949E-03 (241)
17	1.3288E-03 (332)	8.8280E-04 (332)	6.2942E-04 (231)	6.2101E-04 (231)	4.0569E-04 (231)
18	1.0369E-03 (332)	6.7120E-04 (332)	3.6893E-04 (332)	1.7997E-04 (231)	1.2285E-04 (231)
19	5.5611E-04 (332)	3.6898E-04 (332)	2.1998E-04 (332)	1.0913E-04 (332)	6.3520E-05 (332)
20	2.0820E-04 (332)	1.5084E-04 (332)	1.0478E-04 (332)	5.7516E-05 (332)	3.5801E-05 (332)
21	5.7207E-05 (332)	4.6305E-05 (332)	3.6005E-05 (332)	7.5225E-05 (331)	1.0864E-04 (331)
22	1.9129E-05 (332)	1.7676E-05 (332)	1.5971E-05 (332)	1.4120E-05 (332)	1.3393E-05 (332)
23	1.3509E-05 (332)	1.3361E-05 (332)	1.3843E-05 (315)	1.3466E-05 (315)	1.3111E-05 (315)
24	1.3104E-05 (315)	1.5277E-05 (315)	3.2548E-05 (315)	3.2832E-05 (315)	2.2659E-05 (315)
25	1.3458E-05 (315)	1.8772E-05 (315)	6.9337E-05 (315)	8.2302E-05 (315)	5.5854E-05 (315)
26	1.5510E-05 (315)	1.8831E-05 (315)	3.6159E-05 (315)	3.4372E-05 (315)	2.3207E-05 (315)
27	2.4411E-05 (315)	3.3431E-05 (315)	3.8431E-05 (315)	2.7052E-05 (315)	1.9370E-05 (315)
28	4.1996E-05 (315)	7.0478E-05 (315)	9.1976E-05 (315)	6.3136E-05 (315)	3.9888E-05 (315)
29	5.2543E-05 (315)	9.4352E-05 (315)	1.2952E-04 (315)	9.0476E-05 (315)	5.6925E-05 (315)
30	4.1395E-05 (315)	7.0476E-05 (315)	9.1972E-05 (315)	6.3135E-05 (315)	3.9888E-05 (315)
31	2.4431E-05 (315)	3.3270E-05 (315)	3.7588E-05 (315)	2.6596E-05 (315)	1.9259E-05 (315)
32	2.6729E-05 (17)	1.9929E-05 (17)	1.6548E-05 (315)	1.4546E-05 (315)	1.3549E-05 (315)
33	8.6057E-05 (17)	5.6713E-05 (17)	3.5043E-05 (355)	2.0680E-05 (355)	1.5784E-05 (355)
34	2.4242E-04 (17)	1.7037E-04 (17)	1.1896E-04 (17)	6.0306E-05 (17)	2.9940E-05 (17)
35	4.6396E-04 (17)	3.3055E-04 (17)	2.5932E-04 (17)	1.4603E-04 (17)	8.5355E-05 (17)
36	1.7021E-03 (319)	1.6188E-03 (315)	1.3298E-03 (356)	7.4928E-04 (356)	4.0325E-04 (356)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

SO2--SO2

YEARLY MAXIMUM 3-HOUR CONC= 8.08745-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308, HOUR=1503.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE	0.7 KM	1.1 KM	2.5 KM	4.7 KM	8.7 KM
DIR					
1	5.25755E-04 (321)	3.41455E-03 (321)	1.03565E-03 (315)	1.30575E-03 (355)	1.19105E-03 (355)
2	5.42775E-04 (248)	2.69415E-04 (248)	1.73285E-03 (308)	2.28775E-03 (292)	1.69835E-03 (292)
3	1.78445E-04 (298)	2.96405E-03 (298)	1.52465E-03 (298)	1.51455E-03 (298)	1.06835E-03 (185)
4	5.67285E-04 (292)	3.16065E-03 (292)	1.93255E-03 (292)	9.92105E-04 (292)	7.74555E-04 (284)
5	5.57155E-04 (340)	3.33005E-03 (340)	2.11065E-03 (340)	1.63965E-03 (340)	1.11525E-03 (340)
6	4.03485E-04 (340)	2.39895E-03 (340)	1.19345E-03 (321)	8.91125E-04 (321)	5.35545E-04 (321)
7	1.61945E-04 (340)	9.54435E-04 (340)	3.79625E-04 (321)	2.62145E-04 (321)	1.31465E-04 (321)
8	3.53625E-05 (340)	1.61135E-04 (340)	6.09245E-05 (340)	6.05315E-05 (321)	4.17705E-04 (321)
9	5.18225E-05 (340)	2.60175E-05 (340)	1.61495E-05 (340)	1.47025E-05 (331)	1.32645E-05 (331)
10	2.71705E-05 (342)	1.73125E-05 (342)	2.04755E-04 (331)	8.15515E-04 (331)	8.48795E-04 (331)
11	1.44455E-04 (342)	6.42615E-05 (342)	2.81575E-05 (342)	1.85345E-05 (342)	1.50815E-05 (342)
12	6.27455E-04 (342)	3.30165E-04 (342)	1.27005E-04 (342)	5.23075E-04 (331)	9.32015E-04 (331)
13	2.09175E-03 (342)	1.07725E-03 (342)	4.41055E-04 (342)	1.53155E-03 (331)	1.69705E-03 (331)
14	3.90125E-03 (342)	2.09555E-03 (342)	8.84125E-04 (342)	1.41745E-03 (331)	1.73165E-03 (331)
15	4.77195E-03 (342)	2.72565E-03 (241)	1.60865E-03 (222)	1.37015E-03 (222)	1.09315E-03 (222)
16	5.65875E-03 (341)	3.26525E-03 (342)	2.33275E-03 (331)	2.45965E-03 (241)	2.35525E-03 (241)
17	5.02575E-03 (218)	3.11685E-03 (332)	2.01765E-03 (231)	2.83205E-03 (231)	2.06625E-03 (342)
18	3.85815E-03 (332)	2.14455E-03 (332)	1.15615E-03 (332)	9.53925E-04 (231)	6.93905E-04 (231)
19	2.06565E-03 (332)	1.43645E-03 (332)	1.08715E-03 (332)	5.85905E-04 (332)	3.29595E-04 (332)
20	7.88035E-04 (332)	7.45455E-04 (332)	6.09435E-04 (332)	3.29175E-04 (332)	1.79775E-04 (332)
21	2.25235E-04 (332)	2.23655E-04 (332)	1.80465E-04 (332)	5.10555E-04 (331)	7.78105E-04 (331)
22	4.73865E-05 (332)	4.58995E-05 (332)	3.57535E-05 (342)	2.17765E-05 (332)	1.61025E-05 (332)
23	1.62595E-05 (332)	1.57075E-05 (332)	1.97425E-05 (315)	1.67295E-05 (315)	1.38865E-05 (315)
24	1.34305E-05 (315)	3.12135E-05 (315)	1.70195E-04 (315)	1.71555E-04 (315)	9.02745E-05 (315)
25	1.06615E-05 (315)	5.91745E-05 (315)	4.63705E-04 (315)	5.67425E-04 (315)	3.55835E-04 (315)
26	3.33905E-05 (315)	5.96505E-05 (315)	1.98275E-04 (315)	1.83975E-04 (315)	9.46575E-05 (315)
27	1.04535E-04 (315)	1.76455E-04 (315)	2.16455E-04 (315)	1.25415E-04 (315)	6.39615E-05 (315)
28	2.93375E-04 (315)	4.72835E-04 (315)	6.44815E-04 (315)	4.14095E-04 (315)	2.28905E-04 (315)
29	3.29355E-04 (315)	6.54815E-04 (315)	9.45145E-04 (315)	6.32805E-04 (315)	3.64405E-04 (315)
30	2.44965E-04 (315)	4.72815E-04 (315)	6.44775E-04 (315)	4.14085E-04 (315)	2.28905E-04 (315)
31	1.04155E-04 (315)	1.75165E-04 (315)	2.09705E-04 (315)	1.21685E-04 (315)	6.30755E-05 (315)
32	1.22905E-04 (17)	6.93225E-05 (17)	4.12235E-05 (315)	2.53505E-05 (315)	1.73875E-05 (315)
33	5.95465E-04 (17)	3.54315E-04 (17)	1.62215E-04 (355)	5.34725E-05 (355)	3.14175E-05 (355)
34	1.83305E-03 (17)	1.15385E-03 (17)	7.64615E-04 (17)	1.63445E-04 (17)	1.39165E-04 (17)
35	3.52505E-03 (17)	2.22775E-03 (17)	1.66135E-03 (17)	2.69575E-04 (17)	5.33225E-01 (17)
36	8.08745E-03 (308)	5.61765E-03 (354)	4.52605E-03 (356)	2.82505E-03 (356)	1.57445E-03 (356)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
319	1.7021E-03	36	0.71
309	1.6952E-03	36	0.71
222	1.6337E-03	16	0.71
315	1.6188E-03	36	1.33
331	1.5893E-03	16	0.71
231	1.4883E-03	16	0.71
241	1.4656E-03	16	4.65
342	1.4257E-03	16	0.71
340	1.3939E-03	5	0.71
219	1.3627E-03	16	0.71
356	1.3298E-03	36	2.49
332	1.3288E-03	17	0.71
17	1.2528E-03	36	0.71
355	1.2434E-03	36	1.33
354	1.2116E-03	36	0.71
298	1.2089E-03	2	0.71
321	1.1984E-03	36	0.71
292	1.1298E-03	4	0.71
185	1.1241E-03	36	0.71
284	1.1224E-03	36	0.71

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=    13.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 775.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	760.0	750.0	760.0	970.0	1300.0
2	760.0	750.0	1120.0	825.0	960.0
3	755.0	750.0	740.0	800.0	1000.0
4	750.0	750.0	740.0	1100.0	1100.0
5	750.0	750.0	740.0	900.0	1060.0
6	740.0	745.0	1020.0	1160.0	1000.0
7	780.0	780.0	920.0	1000.0	1100.0
8	820.0	920.0	880.0	1060.0	800.0
9	860.0	830.0	720.0	1000.0	960.0
10	890.0	740.0	720.0	800.0	920.0
11	920.0	720.0	760.0	960.0	1020.0
12	850.0	740.0	720.0	1070.0	1000.0
13	780.0	720.0	960.0	1060.0	1000.0
14	750.0	740.0	1150.0	1020.0	1080.0
15	740.0	900.0	1020.0	800.0	1020.0
16	730.0	800.0	1060.0	780.0	940.0
17	730.0	900.0	1020.0	1010.0	720.0
18	740.0	960.0	1020.0	1020.0	900.0
19	740.0	820.0	720.0	800.0	780.0
20	740.0	760.0	970.0	720.0	1040.0
21	730.0	720.0	980.0	720.0	750.0
22	760.0	780.0	920.0	800.0	980.0
23	760.0	860.0	1100.0	1040.0	1020.0
24	760.0	840.0	1100.0	950.0	760.0
25	760.0	760.0	820.0	1100.0	900.0
26	760.0	780.0	840.0	1140.0	740.0
27	760.0	800.0	1080.0	1140.0	800.0
28	760.0	900.0	1040.0	1100.0	1200.0
29	780.0	1060.0	890.0	900.0	1400.0
30	780.0	1160.0	1060.0	1060.0	1400.0
31	790.0	1080.0	1100.0	1100.0	1100.0
32	805.0	1120.0	1040.0	1040.0	1100.0
33	795.0	1140.0	1020.0	1020.0	1100.0
34	805.0	1010.0	1020.0	1000.0	1400.0
35	770.0	1020.0	830.0	1000.0	1500.0
36	755.0	760.0	800.0	1040.0	1600.0

STACK # 1--KINGSTON STACKS#1-4, NORMAL POWER LOAD-SRC SO2
STACK # 2--KINGSTON STACKS#5-9, NORMAL POWER LOAD-SRC SO2

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	533.00	0.00	76.20	4.27	10.90	416.00	156.09
2	NOM	936.00	0.00	91.44	5.03	10.50	414.00	208.65

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.07 1.08 1.24 1.13 1.07 1.04 0.91 0.74 0.83 0.88 0.93 1.07

YEAR BASED ON 365. DAYS

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 5.0552E-05 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	3.54219E-05	3.34980E-05	2.91274E-05	2.30704E-05	1.91954E-05
2	3.65364E-05	3.25671E-05	2.70169E-05	2.27102E-05	1.97417E-05
3	3.85684E-05	3.42334E-05	2.93683E-05	2.55718E-05	2.19818E-05
4	3.90537E-05	3.46059E-05	2.83854E-05	2.37534E-05	2.07251E-05
5	3.47263E-05	3.08725E-05	2.61569E-05	2.26676E-05	2.01155E-05
6	2.70062E-05	2.41507E-05	2.10467E-05	1.90466E-05	1.79864E-05
7	2.11771E-05	1.96402E-05	1.80495E-05	1.67369E-05	1.59507E-05
8	1.88158E-05	1.77238E-05	1.67327E-05	1.62812E-05	1.55215E-05
9	1.83566E-05	1.69585E-05	1.57021E-05	1.52782E-05	1.47105E-05
10	1.86190E-05	1.71123E-05	1.58584E-05	1.54609E-05	1.49121E-05
11	1.86360E-05	1.70823E-05	1.58138E-05	1.54121E-05	1.47959E-05
12	1.88661E-05	1.72882E-05	1.64659E-05	1.66470E-05	1.59701E-05
13	2.01382E-05	1.80898E-05	1.70197E-05	1.68076E-05	1.57225E-05
14	2.33619E-05	2.04983E-05	1.88116E-05	1.82358E-05	1.67994E-05
15	2.81083E-05	2.41166E-05	2.18790E-05	2.10951E-05	1.85741E-05
16	3.16562E-05	2.77119E-05	2.87015E-05	2.93497E-05	2.42161E-05
17	2.93871E-05	2.57454E-05	2.32493E-05	2.20422E-05	1.96033E-05
18	2.32295E-05	2.08481E-05	1.87930E-05	1.71609E-05	1.58019E-05
19	1.85899E-05	1.73580E-05	1.61206E-05	1.51840E-05	1.46354E-05
20	1.71080E-05	1.68126E-05	1.58650E-05	1.47793E-05	1.42609E-05
21	1.77961E-05	1.82948E-05	1.75818E-05	1.63961E-05	1.54514E-05
22	1.88769E-05	1.99145E-05	1.94028E-05	1.80379E-05	1.71551E-05
23	1.88711E-05	2.03667E-05	2.02423E-05	1.85672E-05	1.76512E-05
24	1.76524E-05	1.92224E-05	1.95092E-05	1.81071E-05	1.72732E-05
25	1.63671E-05	1.75724E-05	1.80154E-05	1.73722E-05	1.65505E-05
26	1.57801E-05	1.66124E-05	1.64408E-05	1.53117E-05	1.46981E-05
27	1.58004E-05	1.66730E-05	1.66934E-05	1.57934E-05	1.55293E-05
28	1.58055E-05	1.67561E-05	1.67369E-05	1.56513E-05	1.50654E-05
29	1.53691E-05	1.61982E-05	1.60238E-05	1.50992E-05	1.47140E-05
30	1.47787E-05	1.55349E-05	1.57905E-05	1.50166E-05	1.45604E-05
31	1.44078E-05	1.48586E-05	1.52919E-05	1.49036E-05	1.45183E-05
32	1.47844E-05	1.48538E-05	1.46006E-05	1.41246E-05	1.38742E-05
33	1.67535E-05	1.70032E-05	1.63102E-05	1.51643E-05	1.46083E-05
34	2.04436E-05	2.15004E-05	2.05518E-05	1.77041E-05	1.61492E-05
35	2.45205E-05	2.58394E-05	2.41601E-05	2.04666E-05	1.84386E-05
36	5.05522E-05	5.02179E-05	4.30135E-05	3.14001E-05	2.38840E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 5.4597E-04 DIRECTION=360. DISTANCE= 1.3 KM DAY=315.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.8676E-04 (298)	1.9543E-04 (315)	1.5199E-04 (284)	1.0991E-04 (262)	7.1286E-05 (341)
2	3.5670E-04 (298)	2.5404E-04 (326)	1.7069E-04 (326)	1.2053E-04 (37)	1.3087E-04 (234)
3	3.1734E-04 (293)	2.0880E-04 (276)	1.8753E-04 (255)	2.5528E-04 (262)	1.8477E-04 (234)
4	3.5113E-04 (292)	2.3998E-04 (292)	1.7552E-04 (260)	1.9066E-04 (260)	1.1667E-04 (260)
5	3.8087E-04 (340)	2.7995E-04 (340)	1.7487E-04 (340)	2.0816E-04 (139)	1.3419E-04 (139)
6	2.9299E-04 (330)	1.8419E-04 (340)	1.3495E-04 (187)	9.6586E-05 (238)	8.9505E-05 (238)
7	2.0126E-04 (330)	1.2856E-04 (306)	1.0122E-04 (174)	1.1223E-04 (174)	7.6412E-05 (174)
8	2.3631E-04 (306)	1.6498E-04 (322)	1.1980E-04 (140)	2.0480E-04 (140)	1.9975E-04 (140)
9	2.7177E-04 (295)	1.4013E-04 (322)	9.6359E-05 (243)	9.1854E-05 (174)	8.2135E-05 (140)
10	2.7139E-04 (295)	1.5436E-04 (280)	1.3399E-04 (1)	1.2268E-04 (1)	1.0222E-04 (140)
11	2.4617E-04 (295)	2.5687E-04 (280)	1.8431E-04 (280)	1.2006E-04 (280)	8.8772E-05 (280)
12	2.2806E-04 (295)	2.0983E-04 (280)	1.5649E-04 (280)	1.5906E-04 (280)	1.3658E-04 (280)
13	2.5496E-04 (307)	1.9166E-04 (307)	1.3022E-04 (287)	1.9669E-04 (287)	1.4670E-04 (287)
14	2.9074E-04 (307)	2.0407E-04 (307)	1.5878E-04 (167)	1.8666E-04 (167)	1.5666E-04 (192)
15	3.4792E-04 (342)	2.1757E-04 (342)	1.5796E-04 (222)	1.5109E-04 (167)	1.3498E-04 (193)
16	4.4720E-04 (331)	3.2072E-04 (331)	3.1883E-04 (241)	4.0818E-04 (241)	2.7135E-04 (241)
17	3.7748E-04 (332)	2.9120E-04 (359)	2.2444E-04 (359)	2.7100E-04 (204)	1.8576E-04 (204)
18	2.9730E-04 (332)	1.9809E-04 (332)	1.1618E-04 (252)	1.1506E-04 (252)	8.3034E-05 (252)
19	1.8211E-04 (338)	1.3566E-04 (360)	7.8205E-05 (252)	9.2428E-05 (333)	7.1065E-05 (333)
20	1.5383E-04 (338)	1.1553E-04 (360)	7.6638E-05 (193)	5.1740E-05 (193)	4.1603E-05 (119)
21	1.7888E-04 (152)	2.0555E-04 (30)	1.7806E-04 (30)	1.1598E-04 (30)	7.5202E-05 (29)
22	2.6582E-04 (152)	1.8109E-04 (152)	1.4347E-04 (30)	1.2726E-04 (30)	1.2529E-04 (282)
23	2.1901E-04 (152)	1.7750E-04 (314)	1.4035E-04 (317)	1.1393E-04 (282)	1.5779E-04 (282)
24	2.0297E-04 (302)	2.4196E-04 (302)	1.7479E-04 (302)	1.1867E-04 (302)	9.3236E-05 (363)
25	1.6558E-04 (302)	1.8428E-04 (302)	1.2113E-04 (302)	1.3136E-04 (363)	1.6232E-04 (208)
26	1.3676E-04 (317)	1.2285E-04 (317)	8.7748E-05 (317)	5.4967E-05 (317)	4.6716E-05 (21)
27	1.3423E-04 (314)	1.2246E-04 (314)	1.0256E-04 (350)	7.7910E-05 (317)	9.1671E-05 (349)
28	1.7699E-04 (314)	1.6713E-04 (314)	1.2199E-04 (312)	8.5375E-05 (312)	5.1243E-05 (25)
29	1.3370E-04 (314)	1.2188E-04 (314)	8.8674E-05 (334)	7.4755E-05 (125)	5.8330E-05 (349)
30	9.2626E-05 (33)	1.0242E-04 (33)	9.1026E-05 (297)	5.5935E-05 (297)	4.3921E-05 (304)
31	1.0496E-04 (179)	9.2786E-05 (33)	8.8556E-05 (285)	6.2699E-05 (285)	6.7583E-05 (349)
32	1.1472E-04 (179)	8.2545E-05 (179)	5.0552E-05 (334)	3.8070E-05 (135)	4.6179E-05 (304)
33	1.0041E-04 (179)	8.4595E-05 (48)	8.2541E-05 (107)	6.7210E-05 (107)	5.5102E-05 (16)
34	1.2727E-04 (42)	1.2090E-04 (297)	1.3860E-04 (16)	1.0077E-04 (16)	6.9602E-05 (16)
35	1.6972E-04 (269)	1.3928E-04 (269)	1.1787E-04 (16)	7.8704E-05 (31)	8.6631E-05 (22)
36	5.3221E-04 (319)	5.4597E-04 (315)	3.5803E-04 (315)	1.8200E-04 (356)	1.0342E-04 (116)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.2289E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.4737E-03 (321)	9.7329E-04 (262)	7.4489E-04 (341)	6.7823E-04 (341)	4.7913E-04 (341)
2	1.6088E-03 (293)	1.1014E-03 (326)	7.0314E-04 (341)	7.9062E-04 (341)	7.8587E-04 (234)
3	1.3929E-03 (255)	1.0050E-03 (276)	7.2324E-04 (294)	9.5952E-04 (294)	8.3667E-04 (234)
4	1.6568E-03 (292)	9.9972E-04 (6)	6.7872E-04 (260)	6.3042E-04 (260)	4.0281E-04 (161)
5	1.5900E-03 (325)	9.8070E-04 (275)	6.2115E-04 (301)	6.9329E-04 (139)	5.5374E-04 (141)
6	1.3415E-03 (320)	8.7165E-04 (320)	5.6698E-04 (187)	6.8094E-04 (238)	6.2485E-04 (238)
7	1.1068E-03 (253)	7.1334E-04 (322)	5.8603E-04 (207)	5.1862E-04 (209)	3.6900E-04 (209)
8	1.3424E-03 (295)	1.0043E-03 (322)	5.4724E-04 (180)	7.7959E-04 (214)	5.3572E-04 (140)
9	1.5053E-03 (295)	7.9716E-04 (322)	4.3788E-04 (322)	5.8886E-04 (174)	5.2790E-04 (174)
10	1.3617E-03 (295)	8.3005E-04 (236)	4.6587E-04 (306)	5.6975E-04 (1)	4.7480E-04 (1)
11	1.4542E-03 (301)	9.1281E-04 (280)	6.0552E-04 (280)	5.6946E-04 (330)	4.1939E-04 (209)
12	1.3112E-03 (301)	7.8990E-04 (280)	5.3759E-04 (280)	4.8281E-04 (217)	4.9193E-04 (280)
13	1.1697E-03 (291)	7.8175E-04 (291)	5.4171E-04 (295)	6.0626E-04 (287)	6.1990E-04 (192)
14	1.4973E-03 (290)	9.9581E-04 (290)	6.0192E-04 (251)	7.8966E-04 (251)	5.3903E-04 (251)
15	1.2241E-03 (309)	8.0711E-04 (217)	7.7832E-04 (240)	7.6790E-04 (217)	5.8709E-04 (193)
16	1.5049E-03 (331)	8.8370E-04 (256)	7.2584E-04 (230)	9.1140E-04 (283)	6.1707E-04 (283)
17	1.3067E-03 (190)	1.0524E-03 (359)	7.9172E-04 (359)	7.4375E-04 (231)	5.7531E-04 (342)
18	1.2842E-03 (353)	8.8661E-04 (281)	6.2592E-04 (281)	5.1721E-04 (252)	4.3206E-04 (20)
19	1.2226E-03 (338)	7.7201E-04 (338)	4.2478E-04 (281)	5.9630E-04 (333)	4.5355E-04 (333)
20	1.1138E-03 (338)	6.8550E-04 (338)	4.5274E-04 (280)	2.6889E-04 (347)	2.2220E-04 (358)
21	1.0371E-03 (333)	9.3090E-04 (333)	8.6143E-04 (30)	4.9181E-04 (29)	4.4731E-04 (29)
22	1.1818E-03 (152)	9.1000E-04 (206)	7.0411E-04 (232)	5.2740E-04 (282)	7.1049E-04 (282)
23	1.0690E-03 (343)	9.0964E-04 (314)	7.3197E-04 (232)	5.8896E-04 (282)	7.3923E-04 (282)
24	1.0062E-03 (302)	1.0002E-03 (302)	7.0660E-04 (302)	5.5459E-04 (127)	6.0934E-04 (283)
25	8.7907E-04 (302)	8.2442E-04 (302)	5.0947E-04 (302)	6.5970E-04 (363)	6.5563E-04 (363)
26	8.3951E-04 (317)	7.0183E-04 (317)	4.9480E-04 (265)	2.5052E-04 (349)	2.8244E-04 (21)
27	7.6822E-04 (314)	6.7181E-04 (314)	6.3703E-04 (350)	3.7172E-04 (350)	4.2989E-04 (349)
28	1.0429E-03 (314)	9.4547E-04 (314)	6.2919E-04 (312)	4.0932E-04 (312)	3.0115E-04 (232)
29	7.6922E-04 (314)	6.9237E-04 (334)	4.8193E-04 (334)	3.6509E-04 (125)	3.7557E-04 (349)
30	6.4997E-04 (33)	7.1727E-04 (33)	4.7161E-04 (285)	3.3442E-04 (46)	2.6037E-04 (304)
31	6.8424E-04 (179)	6.4670E-04 (33)	6.1654E-04 (285)	4.1039E-04 (285)	4.4966E-04 (349)
32	7.9594E-04 (179)	5.0849E-04 (179)	3.0661E-04 (334)	2.1356E-04 (135)	2.7844E-04 (304)
33	7.0891E-04 (179)	5.8576E-04 (48)	4.5554E-04 (107)	2.6649E-04 (334)	2.5702E-04 (311)
34	9.1541E-04 (42)	8.2368E-04 (48)	6.2870E-04 (16)	3.9480E-04 (16)	3.8151E-04 (289)
35	1.1239E-03 (269)	8.9637E-04 (269)	6.7116E-04 (16)	3.8104E-04 (168)	4.7708E-04 (289)
36	2.2289E-03 (308)	1.6620E-03 (319)	1.1235E-03 (356)	7.0981E-04 (183)	5.2647E-04 (186)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
315	5.4597E-04	36	1.33
319	5.3221E-04	36	0.71
308	4.9050E-04	36	0.71
331	4.4720E-04	16	0.71
356	4.4502E-04	36	1.33
222	4.154AE-04	16	0.71
241	4.0A1AE-04	16	4.65
284	3.9A1AE-04	36	0.71
355	3.9274E-04	36	1.33
340	3.A087E-04	5	0.71
342	3.790AE-04	16	0.71
332	3.774AE-04	17	0.71
231	3.7254E-04	16	0.71
218	3.5897E-04	16	0.71
354	3.5AAAE-04	36	0.71
298	3.5670E-04	2	0.71
292	3.5113E-04	4	0.71
321	3.3788E-04	36	0.71
17	3.3573E-04	36	0.71
185	3.3326E-04	36	0.71

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT-MAXIMUM POWER LOAD CONDITIONS-SRC SO2

STACK # 1--KINGSTON STACKS#1-4, MAX.LOAD SRC SO2
STACK # 2--KINGSTON STACKS#5-9, MAX.LOAD SRC SO2

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	750.00	0.00	76.20	4.27	14.26	427.40	204.20
2	NOM	1177.00	0.00	91.44	5.03	13.66	421.90	271.44

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 6 JDAY=168

ISTAB=	4	4	4	4	4	4	4	4	4	3	2	1	1	1	3	3	3	4	4	4	4	4	4	4
AWS=	2.9	1.2	1.3	2.5	0.9	1.7	1.5	1.1	0.8	1.6	3.0	4.0	4.4	5.9	7.0	6.9	7.1	7.3	7.2	6.6	5.6	5.9	5.9	4.7
TEMP=	292.	292.	291.	291.	290.	290.	290.	290.	292.	294.	296.	298.	300.	301.	302.	302.	303.	303.	303.	302.	300.	299.	298.	296.
AFV=	305.	295.	334.	323.	26.	238.	333.	4.	317.	358.	356.	350.	2.	0.	9.	30.	29.	30.	27.	25.	11.	26.	29.	51.
AFVR=	305.	295.	334.	323.	26.	238.	333.	4.	317.	358.	356.	350.	2.	0.	9.	30.	29.	30.	27.	25.	11.	26.	29.	51.
HLH1=	2134.	2134.	2134.	2134.	2134.	2134.	2134.	2134.	2058.	1982.	1906.	1830.	1754.											
	1678.	1602.	1524.	1524.	1524.	1524.	1524.	1524.	1524.	1524.	1524.	1524.												

JYR=75 IHO=12 JDAY=336

ISTAB=	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	3	4	4	4	4	4	4	4
AWS=	2.6	2.2	1.6	1.3	1.0	1.0	0.9	0.5	0.9	1.8	2.0	2.8	3.3	3.8	3.8	3.7	3.7	4.4	4.4	3.8	3.9	3.8	2.7	3.0
TEMP=	273.	272.	271.	271.	270.	270.	270.	269.	270.	272.	275.	278.	281.	282.	284.	284.	284.	283.	281.	279.	277.	277.	275.	275.
AFV=	208.	239.	259.	239.	129.	143.	16.	5.	59.	74.	2.	58.	2.	1.	8.	39.	38.	20.	15.	54.	60.	46.	53.	83.
AFVR=	208.	239.	259.	239.	129.	143.	16.	5.	59.	74.	2.	58.	2.	1.	8.	39.	38.	20.	15.	54.	60.	46.	53.	83.
HLH1=	305.	305.	305.	305.	305.	305.	305.	381.	457.	533.	609.	685.												
	761.	837.	914.	914.	914.	914.	914.	914.	914.	914.	914.	914.												

JYR=76 IHO= 1 JDAY= 4

ISTAB=	3	3	4	3	3	4	4	4	3	1	1	1	1	1	1	1	3	4	4	4	4	4	4	4
AWS=	5.0	7.2	7.6	7.3	8.7	7.9	7.7	6.4	6.1	5.4	6.2	7.5	6.2	5.7	6.3	6.4	5.9	6.4	6.7	8.1	8.6	7.1	6.2	6.0
TEMP=	272.	271.	270.	270.	268.	267.	266.	266.	266.	266.	267.	267.	268.	269.	270.	270.	270.	269.	268.	267.	267.	266.	266.	265.
AFV=	154.	162.	152.	143.	162.	150.	165.	168.	168.	169.	160.	173.	167.	162.	176.	178.	163.	163.	162.	162.	161.	163.	178.	179.
AFVR=	154.	162.	152.	143.	162.	150.	165.	168.	168.	169.	160.	173.	167.	162.	176.	178.	163.	163.	162.	162.	161.	163.	178.	179.
HLH1=	400.	400.	400.	400.	400.	400.	400.	438.	476.	514.	552.	590.												
	628.	666.	710.	710.	710.	710.	710.	710.	710.	710.	710.	710.												

JYR=76 IHO= 1 JDAY= 8

ISTAB=	4	4	3	3	3	3	3	3	3	2	1	1	1	1	1	1	2	3	3	4	3	4	4	4
AWS=	7.2	8.0	10.6	11.0	10.3	11.2	10.7	8.2	9.6	9.3	9.2	9.0	6.6	6.9	6.8	7.5	7.2	7.7	5.8	5.9	5.8	6.8	6.1	5.1
TEMP=	276.	275.	274.	272.	271.	270.	269.	268.	268.	267.	267.	268.	267.	267.	267.	266.	266.	265.	264.	264.	264.	263.	262.	262.
AFV=	147.	142.	153.	158.	167.	160.	164.	163.	163.	163.	161.	161.	165.	167.	164.	174.	164.	150.	163.	164.	151.	150.	150.	150.
AFVR=	147.	142.	153.	158.	167.	160.	164.	163.	163.	163.	161.	161.	165.	167.	164.	174.	164.	150.	163.	164.	151.	150.	150.	150.
HLH1=	853.	853.	853.	853.	853.	853.	853.	853.	968.	883.	898.	913.	928.											
	943.	958.	975.	975.	975.	975.	975.	975.	975.	975.	975.	975.	975.											

```
JYR=76 IHO= 1 JDAY= 17
ISTAR=  3    3    3    3    3    3    3    3    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS= 10.1  8.7 10.6  9.3  7.2  8.9 10.2  8.9  7.7  8.2 10.2 10.6 10.5 10.1 10.2  9.1  8.1  8.1  6.1  5.7  6.1  5.5  4.6  5.7
TEMP= 273. 272. 272. 271. 270. 270. 269. 267. 267. 267. 267. 268. 268. 269. 268. 268. 267. 267. 267. 267. 266. 266. 265. 265.
AFV=  164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
AFVR= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
HLHI=  400.  400.  400.  400.  400.  400.  400.  427.  454.  481.  508.  535.
       562.  589.  617.  617.  617.  617.  617.  617.  617.  617.  617.  617.

JYR=76 IHO= 1 JDAY= 27
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    4    4    4    4    4    4
AWS=  6.4  5.2  6.4  7.2  7.6  8.0  8.1  8.9  9.8  8.4  8.1  7.5  8.2  7.5  9.1  6.7  8.0  7.2  5.7  3.9  2.8  2.3  4.2  6.3
TEMP= 275. 275. 275. 274. 274. 274. 274. 274. 273. 273. 273. 273. 273. 273. 273. 273. 272. 272. 272. 272. 271. 271. 270. 270.
AFV=  170. 162. 161. 165. 164. 165. 166. 164. 166. 165. 157. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
AFVR= 170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 157. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
HLHI=  457.  457.  457.  457.  457.  457.  457.  521.  585.  649.  713.  777.
       841.  905.  975.  975.  975.  975.  975.  975.  975.  975.  975.  975.

JYR=76 IHO= 3 JDAY= 70
ISTAR=  4    4    4    4    4    4    4    4    3    3    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.1  4.3  4.1  3.5  3.6  4.4  3.3  2.7  1.4  0.9  1.7  2.4  2.6  2.6  2.5  4.0  4.4  3.8  3.9  3.8  1.2  1.0  0.5  0.7
TEMP= 276. 276. 276. 275. 274. 273. 273. 273. 274. 276. 278. 281. 283. 284. 285. 287. 287. 287. 286. 285. 283. 282. 280. 279.
AFV=  155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
AFVR= 155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.

JYR=76 IHO= 3 JDAY= 78
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    2    3    3    4    4    4    4    4    4    4
AWS=  1.5  2.7  3.3  2.5  2.0  2.7  3.2  3.9  3.7  4.8  4.4  4.5  5.0  6.1  6.0  6.9  6.9  5.6  5.9  6.7  6.8  6.8  5.1  4.8
TEMP= 273. 272. 271. 271. 271. 271. 271. 271. 273. 279. 282. 285. 288. 289. 291. 291. 291. 290. 289. 288. 288. 287. 286. 284.
AFV=  268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
AFVR= 268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
HLHI=    0.    0.    0.    0.    0.    0.    0.  228.  456.  684.  912. 1140.
      1369. 1596. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829.

JYR=76 IHO= 3 JDAY= 84
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    3    4    4    4    4    5    4
AWS=  2.1  3.5  3.9  4.3  4.6  3.5  3.7  1.8  1.6  2.3  3.2  6.4  6.5  7.0  7.7  7.3  7.4  8.5  6.5  6.9  5.3  5.5  6.7  5.1
TEMP= 279. 278. 277. 276. 276. 275. 275. 275. 278. 284. 287. 289. 291. 291. 293. 293. 293. 293. 291. 291. 291. 289. 286. 285.
AFV=   61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
AFVR=  61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0. 1249. 2498. 3747. 4996. 6245.
      7494. 8743. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999.

JYR=76 IHO= 4 JDAY= 94
ISTAR=  4    4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  1.8  1.3  0.9  1.6  1.6  1.6  0.6  0.4  0.9  1.5  2.2  2.7  4.2  5.3  5.6  5.1  5.6  4.9  5.1  5.9  6.6  5.9  7.6  5.9
TEMP= 281. 280. 279. 278. 277. 277. 276. 277. 280. 284. 289. 292. 295. 296. 298. 298. 298. 298. 297. 295. 293. 292. 291. 290.
AFV=   52.  35.  81.  56.  58.  54.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
AFVR=  52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
HLHI=  400.  400.  400.  400.  400.  400.  400.  537.  674.  811.  948. 1085.
      1227. 1359. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499.
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JYR=76 IMO= 4 JDAY=101
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.5  4.1  5.1  4.1  3.9  3.5  3.3  3.0  2.5  2.4  2.3  2.5  2.1  2.9  3.0  3.3  3.4  3.6  3.7  3.7  3.8  3.8  3.0  4.1
TEMP= 279. 277. 276. 276. 275. 274. 274. 275. 279. 283. 286. 287. 289. 290. 291. 293. 293. 293. 293. 291. 288. 286. 284. 283.
AFV=  196. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
AFVR= 186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
HLH1=    0.   0.   0.   0.   0.   0.   0.  186.  372.  558.  744.  930.
      1116. 1302. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493.


JYR=76 IMO= 4 JDAY=105
ISTAR=  4    4    4    4    4    4    4    2    4    2    1    1    1    1    1    2    1    1    2    4    4    4    4    4    4
AWS=  2.6  1.9  1.5  1.9  1.3  1.3  0.7  1.2  0.8  1.1  2.0  2.9  3.6  3.9  2.5  3.6  3.3  3.3  3.8  4.8  5.4  5.3  3.7  3.5
TEMP= 283. 283. 282. 280. 280. 280. 280. 281. 284. 288. 292. 295. 296. 297. 298. 299. 299. 298. 297. 295. 294. 293. 292. 291.
AFV=  124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
AFVR= 124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
HLH1=    0.   0.   0.   0.   0.   0.   0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IMO= 4 JDAY=107
ISTAR=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  3.4  3.6  3.6  2.5  1.2  0.8  0.6  2.2  2.3  2.4  3.9  6.1  6.4  5.5  4.1  4.3  4.0  2.8  3.6  4.2  3.3  3.3  4.0  4.3
TEMP= 288. 287. 286. 286. 286. 285. 285. 286. 289. 293. 295. 297. 298. 298. 299. 299. 298. 298. 297. 295. 293. 292. 291. 289.
AFV=   58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
AFVR=  58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
HLH1=  244.  244.  244.  244.  244.  244.  244.  491.  738.  985. 1232. 1479.
      1726. 1973. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225.


JYR=76 IMO= 4 JDAY=117
ISTAR=  3    3    3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    4    4    4    4    4    4
AWS=  5.6  6.3  4.3  4.8  5.1  5.2  4.8  5.1  4.2  4.3  3.7  4.2  5.7  6.4  5.9  4.6  5.1  5.9  4.3  4.2  4.5  1.9  1.7  2.3
TEMP= 282. 281. 281. 280. 280. 279. 278. 279. 279. 279. 279. 280. 281. 282. 283. 284. 285. 285. 284. 283. 282. 280. 279. 278.
AFV=  103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
AFVR= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
HLH1=  457.  457.  457.  457.  457.  457.  457.  590.  723.  856.  989. 1122.
      1255. 1388. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 4 JDAY=118
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.3  2.7  3.6  3.4  4.3  5.2  4.3  2.5  2.1  2.4  5.0  5.1  3.8  4.4  5.4  5.4  6.3  7.3  6.1  6.3  5.7  5.8  4.7  3.5
TEMP= 277. 277. 276. 276. 275. 275. 275. 277. 280. 282. 284. 286. 287. 288. 289. 290. 290. 289. 288. 287. 286. 285. 283. 283.
AFV=  226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
AFVR= 225. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
HLH1=  914.  914.  914.  914.  914.  914.  914.  952.  990. 1028. 1066. 1104.
      1142. 1180. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219.


JYR=76 IMO= 5 JDAY=126
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.0  1.2  1.2  1.5  1.3  0.9  0.4  0.9  1.1  2.9  3.7  4.8  4.3  5.2  5.1  4.6  5.3  4.8  5.6  6.3  6.4  5.8  4.1  4.4
TEMP= 280. 279. 279. 278. 278. 278. 278. 280. 284. 287. 290. 292. 294. 295. 296. 297. 297. 296. 296. 294. 293. 290. 289. 290.
AFV=   42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
AFVR=  42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
HLH1=    0.   0.   0.   0.   0.   0.   0.  156.  312.  468.  624.  780.
      936. 1092. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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JYR=76 IMO= 5 JDAY=128
ISTAR=  4    4    4    4    4    4    4    4    3    2    2    1    1    1    1    1    1    1    3    3    4    3    3    3
AWS=  1.9  2.7  3.3  4.0  4.1  3.8  3.3  2.3  2.9  1.5  3.2  3.3  3.9  5.9  5.6  5.9  6.4  7.2  7.2  7.8  8.4  6.4  5.4  2.8
TEMP= 290. 290. 290. 290. 290. 290. 290. 290. 291. 291. 292. 292. 293. 292. 292. 291. 289. 287. 286. 285. 285. 284. 284. 284.
AFV=   65.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
AFVR=  66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
HGHI=  762.  762.  762.  762.  762.  762.  762.  800.  838.  876.  914.  952.
       990. 1028. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067.


JYR=76 IMO= 5 JDAY=140
ISTAR=  4    4    4    4    4    4    4    2    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.4  1.9  2.4  3.2  1.6  2.1  2.8  0.5  0.8  1.3  1.7  1.7  3.7  3.3  3.7  3.7  3.8  3.5  4.7  4.2  4.9  4.7  4.1  2.8
TEMP= 281. 280. 279. 279. 279. 278. 278. 281. 284. 287. 289. 290. 291. 292. 293. 294. 294. 294. 293. 292. 290. 288. 286. 285.
AFV=  177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 130. 147. 135.
AFVR= 177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 130. 147. 135.
HGHI=   40.   40.   40.   40.   40.   40.   40.  225.  410.  595.  780.  965.
      1150. 1335. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527.


JYR=76 IMO= 5 JDAY=141
ISTAR=  4    4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  2.1  1.9  1.9  0.9  1.2  1.2  0.7  0.9  1.3  2.6  3.1  3.0  2.9  3.1  2.3  3.1  3.1  3.2  4.4  4.7  3.6  2.3  2.7
TEMP= 283. 283. 282. 281. 280. 280. 280. 282. 286. 289. 292. 293. 294. 295. 296. 297. 297. 297. 297. 295. 292. 290. 289. 288.
AFV=  106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
AFVR= 106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
HGHI=    0.    0.    0.    0.    0.    0.    0.  190.  380.  570.  760.  950.
      1140. 1330. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 5 JDAY=142
ISTAR=  4    4    4    4    4    4    4    4    2    2    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS=  2.5  2.2  2.6  2.5  1.6  0.7  0.5  0.8  0.8  1.1  2.2  2.0  2.7  2.9  2.5  2.9  2.2  3.0  2.5  2.8  4.8  3.3  3.3  3.8
TEMP= 286. 286. 285. 285. 284. 283. 283. 285. 288. 291. 294. 296. 297. 298. 298. 299. 299. 299. 298. 297. 294. 293. 291. 290.
AFV=   84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
AFVR=  84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
HGHI=    0.    0.    0.    0.    0.    0.    0.  171.  342.  513.  684.  855.
      1026. 1197. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372.

YEAR BASED ON  20. DAYS
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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 1.97966E-04 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.01069E-04	8.60455E-05	6.64401E-05	4.08935E-05	2.71452E-05
2	8.11263E-05	6.30594E-05	4.77209E-05	3.37500E-05	2.40345E-05
3	6.80127E-05	4.98848E-05	3.71301E-05	2.76529E-05	2.29584E-05
4	6.61480E-05	4.88255E-05	3.49577E-05	2.38532E-05	1.91380E-05
5	5.90481E-05	4.47383E-05	3.23458E-05	2.44645E-05	2.17227E-05
6	3.95496E-05	3.05154E-05	2.33391E-05	1.80710E-05	1.55851E-05
7	2.20971E-05	1.83563E-05	1.58483E-05	1.42561E-05	1.35537E-05
8	1.47851E-05	1.38772E-05	1.33491E-05	1.31694E-05	1.31173E-05
9	1.31966E-05	1.30749E-05	1.30246E-05	1.30078E-05	1.30017E-05
10	1.30392E-05	1.30137E-05	1.30298E-05	1.43693E-05	1.44407E-05
11	1.33133E-05	1.31145E-05	1.30400E-05	1.30220E-05	1.30070E-05
12	1.51947E-05	1.39233E-05	1.34718E-05	1.43516E-05	1.49226E-05
13	2.37161E-05	1.79486E-05	1.57610E-05	1.75742E-05	1.75074E-05
14	5.03709E-05	3.20107E-05	2.21758E-05	2.06036E-05	2.00330E-05
15	1.01140E-04	6.40861E-05	4.22111E-05	3.18552E-05	2.53334E-05
16	1.38936E-04	9.30523E-05	8.13340E-05	7.93669E-05	5.90641E-05
17	1.15180E-04	7.44985E-05	5.60954E-05	4.60501E-05	3.57068E-05
18	6.47179E-05	4.14308E-05	2.99521E-05	2.22855E-05	1.79231E-05
19	3.10309E-05	2.26882E-05	1.87842E-05	1.58648E-05	1.44480E-05
20	1.74792E-05	1.56388E-05	1.48344E-05	1.39214E-05	1.34488E-05
21	1.37856E-05	1.35265E-05	1.34456E-05	1.40179E-05	1.43888E-05
22	1.30931E-05	1.30677E-05	1.30455E-05	1.30147E-05	1.30062E-05
23	1.30071E-05	1.30071E-05	1.30134E-05	1.30067E-05	1.30016E-05
24	1.30016E-05	1.30293E-05	1.32510E-05	1.32532E-05	1.31233E-05
25	1.30061E-05	1.30740E-05	1.37196E-05	1.38849E-05	1.35472E-05
26	1.30339E-05	1.30775E-05	1.32994E-05	1.32745E-05	1.31309E-05
27	1.31549E-05	1.32780E-05	1.33505E-05	1.31941E-05	1.30881E-05
28	1.33926E-05	1.37825E-05	1.40913E-05	1.36943E-05	1.33737E-05
29	1.35355E-05	1.41076E-05	1.46100E-05	1.40729E-05	1.36083E-05
30	1.33945E-05	1.37832E-05	1.40913E-05	1.36943E-05	1.33737E-05
31	1.31873E-05	1.32912E-05	1.33443E-05	1.31890E-05	1.30868E-05
32	1.33558E-05	1.32374E-05	1.31234E-05	1.30405E-05	1.30126E-05
33	1.49386E-05	1.43245E-05	1.36485E-05	1.32066E-05	1.30674E-05
34	2.10757E-05	1.91846E-05	1.67668E-05	1.45060E-05	1.35632E-05
35	3.84739E-05	3.42658E-05	2.71860E-05	1.93213E-05	1.59123E-05
36	1.97963E-04	1.78601E-04	1.31825E-04	7.25058E-05	4.21323E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 4.7493E-04 DIRECTION=360. DISTANCE= 0.7 KM DAY=119.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.7221E-04 (299)	1.7101E-04 (308)	1.5688E-04 (356)	1.0220E-04 (356)	7.2078E-05 (355)
2	3.4190E-04 (298)	1.8790E-04 (298)	1.0035E-04 (308)	9.5990E-05 (292)	7.2601E-05 (292)
3	2.9275E-04 (298)	1.7476E-04 (298)	1.1152E-04 (298)	7.5865E-05 (298)	5.1050E-05 (105)
4	3.1950E-04 (292)	2.1541E-04 (292)	1.3100E-04 (340)	7.2399E-05 (340)	4.3517E-05 (340)
5	3.9177E-04 (340)	2.8356E-04 (340)	1.8468E-04 (340)	1.2013E-04 (340)	7.8445E-05 (340)
6	2.8391E-04 (340)	1.9155E-04 (340)	1.0646E-04 (340)	5.2434E-05 (340)	3.1944E-05 (340)
7	1.1734E-04 (340)	7.1803E-05 (340)	3.8551E-05 (340)	2.2339E-05 (340)	1.7124E-05 (321)
8	3.4947E-05 (340)	2.3181E-05 (340)	1.6579E-05 (340)	1.4592E-05 (321)	2.6752E-05 (321)
9	1.5499E-05 (340)	1.3894E-05 (340)	1.3235E-05 (340)	1.3061E-05 (331)	1.3012E-05 (340)
10	1.3503E-05 (342)	1.3155E-05 (342)	1.9526E-05 (331)	4.0376E-05 (331)	4.1811E-05 (331)
11	1.7860E-05 (342)	1.4925E-05 (342)	1.3649E-05 (342)	1.3327E-05 (342)	1.3117E-05 (342)
12	4.0120E-05 (342)	2.5938E-05 (342)	1.9505E-05 (342)	3.0533E-05 (331)	4.4675E-05 (331)
13	1.0665E-04 (342)	6.3409E-05 (342)	3.5251E-05 (342)	6.5612E-05 (331)	7.0950E-05 (331)
14	2.2948E-04 (342)	1.3784E-04 (342)	7.1589E-05 (342)	6.7598E-05 (331)	7.4607E-05 (331)
15	3.6855E-04 (342)	2.3085E-04 (342)	1.5139E-04 (222)	1.5659E-04 (222)	1.0923E-04 (222)
16	4.5825E-04 (222)	3.0386E-04 (331)	2.6169E-04 (222)	4.1129E-04 (241)	3.0879E-04 (241)
17	3.7393E-04 (332)	2.5224E-04 (332)	1.8133E-04 (231)	1.8032E-04 (231)	1.2156E-04 (231)
18	2.9392E-04 (332)	1.9401E-04 (332)	1.1124E-04 (332)	5.8949E-05 (231)	4.3368E-05 (231)
19	1.6200E-04 (332)	1.1079E-04 (332)	7.0137E-05 (332)	3.9613E-05 (332)	2.6992E-05 (332)
20	6.6497E-05 (332)	5.0784E-05 (332)	3.8179E-05 (332)	2.5324E-05 (332)	1.9315E-05 (332)
21	2.5096E-05 (332)	2.2108E-05 (332)	1.9342E-05 (332)	2.9860E-05 (331)	3.9268E-05 (331)
22	1.4673E-05 (332)	1.4276E-05 (332)	1.3819E-05 (332)	1.3310E-05 (332)	1.3109E-05 (332)
23	1.3139E-05 (332)	1.3098E-05 (332)	1.3215E-05 (315)	1.3119E-05 (315)	1.3028E-05 (315)
24	1.3027E-05 (315)	1.3582E-05 (315)	1.8018E-05 (315)	1.8064E-05 (315)	1.5467E-05 (315)
25	1.3122E-05 (315)	1.4479E-05 (315)	2.7391E-05 (315)	3.0699E-05 (315)	2.3944E-05 (315)
26	1.3579E-05 (315)	1.4550E-05 (315)	1.8988E-05 (315)	1.8491E-05 (315)	1.5618E-05 (315)
27	1.6099E-05 (315)	1.8561E-05 (315)	2.0010E-05 (315)	1.6882E-05 (315)	1.4762E-05 (315)
28	2.0853E-05 (315)	2.8651E-05 (315)	3.4825E-05 (315)	2.6885E-05 (315)	2.0475E-05 (315)
29	2.3709E-05 (315)	3.5151E-05 (315)	4.5200E-05 (315)	3.4457E-05 (315)	2.5166E-05 (315)
30	2.0853E-05 (315)	2.8650E-05 (315)	3.4824E-05 (315)	2.6885E-05 (315)	2.0475E-05 (315)
31	1.6096E-05 (315)	1.8519E-05 (315)	1.9795E-05 (315)	1.6763E-05 (315)	1.4734E-05 (315)
32	1.6764E-05 (17)	1.4906E-05 (17)	1.3981E-05 (315)	1.3428E-05 (315)	1.3152E-05 (315)
33	3.3035E-05 (17)	2.5020E-05 (17)	1.9086E-05 (355)	1.5125E-05 (355)	1.3771E-05 (355)
34	7.5931E-05 (17)	5.6206E-05 (17)	4.2184E-05 (17)	2.6071E-05 (17)	1.7688E-05 (17)
35	1.3674E-04 (17)	1.0017E-04 (17)	8.0788E-05 (17)	4.9741E-05 (17)	3.2886E-05 (17)
36	4.7493E-04 (319)	4.5212E-04 (315)	3.7640E-04 (356)	2.1680E-04 (356)	1.2108E-04 (356)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOX--SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.2303E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.4525E-03 (321)	9.5788E-04 (321)	5.4233E-04 (315)	3.6841E-04 (355)	3.3689E-04 (355)
2	1.4755E-03 (298)	7.5279E-04 (298)	4.8560E-04 (308)	6.3656E-04 (292)	4.7493E-04 (292)
3	1.3280E-03 (298)	8.2524E-04 (298)	5.5160E-04 (298)	4.3463E-04 (298)	3.0328E-04 (185)
4	1.5705E-03 (292)	8.8075E-04 (292)	5.4242E-04 (292)	2.8395E-04 (292)	2.2202E-04 (284)
5	1.5397E-03 (340)	9.4345E-04 (340)	5.9183E-04 (340)	4.5709E-04 (340)	3.1708E-04 (340)
6	1.1325E-03 (340)	6.7038E-04 (340)	3.1171E-04 (321)	2.5515E-04 (321)	1.5766E-04 (321)
7	4.5436E-04 (340)	2.4484E-04 (340)	1.1311E-04 (321)	8.1698E-05 (321)	4.5793E-05 (321)
8	1.0656E-04 (340)	5.3814E-05 (340)	2.6250E-05 (340)	2.5695E-05 (321)	1.2301E-04 (321)
9	2.3663E-05 (340)	1.6586E-05 (340)	1.3871E-05 (340)	1.3486E-05 (331)	1.3074E-05 (331)
10	1.6897E-05 (342)	1.4189E-05 (342)	6.5207E-05 (331)	2.3201E-04 (331)	2.4349E-04 (331)
11	4.9134E-05 (342)	2.7132E-05 (342)	1.7192E-05 (342)	1.4527E-05 (342)	1.3576E-05 (342)
12	2.0116E-04 (342)	1.0044E-04 (342)	4.4528E-05 (342)	1.5299E-04 (331)	2.6635E-04 (331)
13	5.8451E-04 (342)	3.0643E-04 (342)	1.3139E-04 (342)	4.2733E-04 (331)	4.7485E-04 (331)
14	1.0821E-03 (342)	5.8446E-04 (342)	2.5393E-04 (342)	3.9549E-04 (331)	4.8683E-04 (331)
15	1.3232E-03 (342)	7.5973E-04 (241)	4.4654E-04 (222)	5.2358E-04 (222)	3.1127E-04 (222)
16	1.5654E-03 (331)	9.0797E-04 (342)	6.5092E-04 (331)	7.9390E-04 (241)	6.5933E-04 (241)
17	1.3913E-03 (218)	8.6680E-04 (332)	5.5616E-04 (231)	7.8720E-04 (231)	5.7714E-04 (342)
18	1.0701E-03 (332)	5.9986E-04 (332)	3.2776E-04 (332)	2.7122E-04 (231)	2.0113E-04 (231)
19	5.7724E-04 (332)	4.0288E-04 (332)	3.0923E-04 (332)	1.7160E-04 (332)	1.0068E-04 (332)
20	2.2486E-04 (332)	2.1322E-04 (332)	1.7743E-04 (332)	1.0053E-04 (332)	5.9188E-05 (332)
21	7.0904E-05 (332)	7.0185E-05 (332)	5.9154E-05 (332)	1.4781E-04 (331)	2.2313E-04 (331)
22	2.2363E-05 (332)	2.1968E-05 (332)	1.9270E-05 (332)	1.5430E-05 (332)	1.3859E-05 (332)
23	1.3949E-05 (332)	1.3738E-05 (332)	1.4722E-05 (315)	1.3952E-05 (315)	1.3226E-05 (315)
24	1.3219E-05 (315)	1.7653E-05 (315)	5.3142E-05 (315)	5.3514E-05 (315)	3.2733E-05 (315)
25	1.3979E-05 (315)	2.4834E-05 (315)	1.2813E-04 (315)	1.5459E-04 (315)	1.0055E-04 (315)
26	1.8432E-05 (315)	2.5396E-05 (315)	6.0901E-05 (315)	5.6927E-05 (315)	3.3947E-05 (315)
27	3.7787E-05 (315)	5.7485E-05 (315)	6.9081E-05 (315)	4.4053E-05 (315)	2.7095E-05 (315)
28	7.5821E-05 (315)	1.3821E-04 (315)	1.8760E-04 (315)	1.2408E-04 (315)	7.2797E-05 (315)
29	9.8673E-05 (315)	1.9021E-04 (315)	2.7060E-04 (315)	1.8466E-04 (315)	1.1032E-04 (315)
30	7.5821E-05 (315)	1.3820E-04 (315)	1.8759E-04 (315)	1.2408E-04 (315)	7.2797E-05 (315)
31	3.7767E-05 (315)	5.7155E-05 (315)	6.7359E-05 (315)	4.3101E-05 (315)	2.6869E-05 (315)
32	4.3102E-05 (17)	2.8219E-05 (17)	2.0799E-05 (315)	1.6420E-05 (315)	1.4215E-05 (315)
33	1.7288E-04 (17)	1.0691E-04 (17)	5.4191E-05 (355)	2.6966E-05 (355)	1.8101E-05 (355)
34	5.1237E-04 (17)	3.2698E-04 (17)	2.1989E-04 (17)	1.0979E-04 (17)	4.7916E-05 (17)
35	9.7704E-04 (17)	6.2280E-04 (17)	4.6617E-04 (17)	2.7714E-04 (17)	1.5752E-04 (17)
36	2.2303E-03 (308)	1.5520E-03 (354)	1.2594E-03 (356)	7.9197E-04 (356)	4.4543E-04 (356)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
319	4.7493E-04	36	0.71
308	4.7443E-04	36	0.71
222	4.5825E-04	16	0.71
315	4.5212E-04	36	1.33
331	4.4569E-04	16	0.71
231	4.1866E-04	16	0.71
241	4.1129E-04	16	4.65
342	4.0077E-04	16	0.71
340	3.9177E-04	5	0.71
218	3.8347E-04	16	0.71
356	3.7640E-04	16	2.49
332	3.7393E-04	17	0.71
17	3.5261E-04	16	0.71
355	3.4969E-04	36	1.33
298	3.4190E-04	2	0.71
354	3.4085E-04	36	0.71
321	3.3856E-04	36	0.71
292	3.1950E-04	4	0.71
185	3.1684E-04	36	0.71
284	3.1610E-04	36	0.71

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     13.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 775.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	760.0	750.0	760.0	970.0	1300.0
2	760.0	750.0	1120.0	825.0	960.0
3	755.0	750.0	740.0	800.0	1000.0
4	750.0	750.0	740.0	1100.0	1100.0
5	750.0	750.0	740.0	900.0	1060.0
6	740.0	745.0	1020.0	1160.0	1000.0
7	780.0	780.0	920.0	1000.0	1100.0
8	820.0	920.0	880.0	1060.0	800.0
9	860.0	830.0	720.0	1000.0	960.0
10	890.0	740.0	720.0	800.0	920.0
11	920.0	720.0	760.0	960.0	1020.0
12	850.0	740.0	720.0	1070.0	1000.0
13	780.0	720.0	960.0	1060.0	1000.0
14	750.0	740.0	1150.0	1020.0	1080.0
15	740.0	900.0	1020.0	800.0	1020.0
16	730.0	800.0	1060.0	780.0	940.0
17	730.0	900.0	1020.0	1010.0	720.0
18	740.0	960.0	1020.0	1020.0	900.0
19	740.0	820.0	720.0	800.0	780.0
20	740.0	760.0	970.0	720.0	1040.0
21	730.0	720.0	980.0	720.0	750.0
22	760.0	780.0	920.0	800.0	980.0
23	760.0	860.0	1100.0	1040.0	1020.0
24	760.0	940.0	1100.0	950.0	760.0
25	760.0	760.0	820.0	1100.0	900.0
26	760.0	780.0	840.0	1140.0	740.0
27	760.0	800.0	1080.0	1140.0	800.0
28	760.0	900.0	1040.0	1100.0	1200.0
29	780.0	1060.0	890.0	900.0	1400.0
30	780.0	1160.0	1060.0	1060.0	1400.0
31	790.0	1080.0	1100.0	1100.0	1100.0
32	805.0	1120.0	1040.0	1040.0	1100.0
33	795.0	1140.0	1020.0	1020.0	1100.0
34	805.0	1010.0	1020.0	1000.0	1400.0
35	770.0	1020.0	830.0	1000.0	1500.0
36	755.0	760.0	800.0	1040.0	1600.0

STACK # 1--KINGSTON STACKS#1-4, NORMAL POWER LOAD-SRC SO2
STACK # 2--KINGSTON STACKS#5-9, NORMAL POWER LOAD-SRC SO2

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	533.00	0.00	76.20	4.27	13.60	416.00	194.75
2	NOM	936.00	0.00	91.44	5.03	13.10	414.00	260.31

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.07 1.08 1.24 1.13 1.07 1.04 0.91 0.74 0.83 0.88 0.93 1.07

YEAR BASED ON 365. DAYS

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NUM--SO2

MAXIMUM MEAN CONC= 4.3906E-05 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1		3.19338E-05	2.95399E-05	2.68151E-05	2.19940E-05	1.84946E-05
2		3.33021E-05	2.92732E-05	2.52074E-05	2.15217E-05	1.90446E-05
3		3.51880E-05	3.07094E-05	2.71372E-05	2.40258E-05	2.10665E-05
4		3.56094E-05	3.10973E-05	2.65433E-05	2.24173E-05	1.98774E-05
5		3.18538E-05	2.79513E-05	2.44804E-05	2.14030E-05	1.93316E-05
6		2.51490E-05	2.23012E-05	1.99904E-05	1.81577E-05	1.72805E-05
7		2.00742E-05	1.84783E-05	1.73472E-05	1.62073E-05	1.55286E-05
8		1.80594E-05	1.69239E-05	1.61391E-05	1.57566E-05	1.52456E-05
9		1.77266E-05	1.63677E-05	1.53104E-05	1.48994E-05	1.45163E-05
10		1.79856E-05	1.65203E-05	1.54588E-05	1.50659E-05	1.46601E-05
11		1.80069E-05	1.64801E-05	1.54245E-05	1.50364E-05	1.46185E-05
12		1.82062E-05	1.66437E-05	1.55769E-05	1.59933E-05	1.56515E-05
13		1.93290E-05	1.73638E-05	1.63573E-05	1.61940E-05	1.54621E-05
14		2.21675E-05	1.94354E-05	1.79186E-05	1.74713E-05	1.64500E-05
15		2.63666E-05	2.24882E-05	2.04669E-05	1.98990E-05	1.80457E-05
16		2.94819E-05	2.52937E-05	2.56681E-05	2.69429E-05	2.32114E-05
17		2.74422E-05	2.37535E-05	2.17224E-05	2.06992E-05	1.88986E-05
18		2.19655E-05	1.95687E-05	1.80334E-05	1.66633E-05	1.55818E-05
19		1.78196E-05	1.66015E-05	1.57028E-05	1.48707E-05	1.43881E-05
20		1.64154E-05	1.60494E-05	1.55116E-05	1.45856E-05	1.41167E-05
21		1.68892E-05	1.71058E-05	1.68966E-05	1.59318E-05	1.51295E-05
22		1.77195E-05	1.82812E-05	1.83326E-05	1.72075E-05	1.64780E-05
23		1.76396E-05	1.95336E-05	1.89510E-05	1.76811E-05	1.68074E-05
24		1.65923E-05	1.75755E-05	1.82428E-05	1.72301E-05	1.64594E-05
25		1.55620E-05	1.63369E-05	1.69744E-05	1.65106E-05	1.58902E-05
26		1.51241E-05	1.56802E-05	1.58610E-05	1.49774E-05	1.43642E-05
27		1.51555E-05	1.57264E-05	1.60801E-05	1.53441E-05	1.50220E-05
28		1.51584E-05	1.57967E-05	1.61330E-05	1.53282E-05	1.47551E-05
29		1.48117E-05	1.53880E-05	1.55172E-05	1.48010E-05	1.44215E-05
30		1.43565E-05	1.48532E-05	1.52119E-05	1.46820E-05	1.42425E-05
31		1.40968E-05	1.43550E-05	1.47562E-05	1.45632E-05	1.42297E-05
32		1.44347E-05	1.44288E-05	1.43040E-05	1.39271E-05	1.37102E-05
33		1.60307E-05	1.61003E-05	1.57777E-05	1.48220E-05	1.42979E-05
34		1.89963E-05	1.95177E-05	1.93262E-05	1.70944E-05	1.56973E-05
35		2.23030E-05	2.29352E-05	2.23834E-05	1.94011E-05	1.75946E-05
36		4.39059E-05	4.26649E-05	3.86633E-05	2.94846E-05	2.27746E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOX--SO2

YEARLY MAXIMUM 24-HOUR CONC= 4.4379E-04 DIRECTION=360. DISTANCE= 0.7 KM DAY=319.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.6549E-04 (298)	1.5692E-04 (308)	1.3646E-04 (356)	1.0209E-04 (262)	6.3968E-05 (310)
2	3.3244E-04 (299)	2.2789E-04 (326)	1.5866E-04 (326)	1.0658E-04 (341)	1.0095E-04 (234)
3	2.9267E-04 (293)	1.8455E-04 (271)	1.5933E-04 (255)	2.1468E-04 (262)	1.7644E-04 (234)
4	3.1508E-04 (292)	2.1394E-04 (292)	1.3866E-04 (260)	1.7155E-04 (260)	1.1215E-04 (260)
5	3.3778E-04 (340)	2.4794E-04 (340)	1.6636E-04 (340)	1.8372E-04 (139)	1.2800E-04 (139)
6	2.6953E-04 (330)	1.6610E-04 (340)	1.1950E-04 (187)	8.4075E-05 (187)	8.1495E-05 (238)
7	1.8933E-04 (330)	1.1555E-04 (306)	8.2810E-05 (174)	9.8350E-05 (174)	7.2539E-05 (174)
8	2.1561E-04 (306)	1.4255E-04 (306)	9.1567E-05 (140)	1.6053E-04 (140)	1.7698E-04 (140)
9	2.5738E-04 (295)	1.2896E-04 (295)	8.4114E-05 (243)	7.4380E-05 (174)	7.3528E-05 (140)
10	2.5671E-04 (295)	1.2765E-04 (295)	1.1412E-04 (1)	1.0576E-04 (1)	8.9886E-05 (140)
11	2.3087E-04 (295)	2.0537E-04 (280)	1.7007E-04 (280)	1.1127E-04 (280)	8.3673E-05 (280)
12	2.0982E-04 (295)	1.6950E-04 (280)	1.3843E-04 (280)	1.3407E-04 (280)	1.2496E-04 (280)
13	2.2464E-04 (307)	1.6847E-04 (307)	1.0746E-04 (291)	1.6521E-04 (287)	1.3649E-04 (287)
14	2.5677E-04 (307)	1.8227E-04 (307)	1.3364E-04 (290)	1.6271E-04 (167)	1.4268E-04 (192)
15	3.1483E-04 (342)	1.9936E-04 (342)	1.3327E-04 (222)	1.3515E-04 (222)	1.2125E-04 (193)
16	4.0106E-04 (331)	2.7831E-04 (331)	2.3947E-04 (241)	3.5585E-04 (241)	2.5872E-04 (241)
17	3.3777E-04 (332)	2.4449E-04 (359)	1.9877E-04 (359)	2.3251E-04 (204)	1.7455E-04 (204)
18	2.6587E-04 (332)	1.7684E-04 (332)	1.0245E-04 (252)	1.0348E-04 (252)	7.9125E-05 (252)
19	1.6126E-04 (338)	1.1670E-04 (360)	7.4649E-05 (252)	7.8806E-05 (333)	6.6678E-05 (333)
20	1.3820E-04 (338)	9.8661E-05 (360)	6.8151E-05 (30)	4.8310E-05 (193)	3.9355E-05 (119)
21	1.6458E-04 (152)	1.6013E-04 (30)	1.5788E-04 (30)	1.0577E-04 (30)	6.9503E-05 (29)
22	2.4130E-04 (152)	1.6237E-04 (152)	1.2162E-04 (206)	1.0928E-04 (30)	1.0484E-04 (282)
23	1.9751E-04 (152)	1.4775E-04 (317)	1.2830E-04 (317)	1.0065E-04 (317)	1.3289E-04 (282)
24	1.6107E-04 (302)	1.9346E-04 (302)	1.6046E-04 (302)	1.0973E-04 (302)	8.7771E-05 (302)
25	1.3223E-04 (302)	1.4922E-04 (302)	1.1342E-04 (302)	9.6016E-05 (363)	1.3003E-04 (208)
26	1.1438E-04 (317)	1.0397E-04 (317)	8.2894E-05 (317)	5.4227E-05 (317)	3.6894E-05 (349)
27	1.1122E-04 (314)	1.0414E-04 (314)	8.8040E-05 (350)	7.0239E-05 (317)	6.4201E-05 (349)
28	1.4599E-04 (314)	1.4135E-04 (314)	9.9295E-05 (312)	7.9548E-05 (312)	4.3242E-05 (312)
29	1.1041E-04 (314)	1.0367E-04 (314)	8.1535E-05 (334)	6.7517E-05 (125)	4.7214E-05 (349)
30	7.5814E-05 (33)	8.5266E-05 (33)	7.9736E-05 (297)	5.3592E-05 (297)	3.8942E-05 (304)
31	9.2665E-05 (179)	7.8779E-05 (33)	7.4034E-05 (285)	5.8553E-05 (285)	5.8757E-05 (349)
32	1.0263E-04 (179)	7.3528E-05 (179)	4.7397E-05 (179)	3.3755E-05 (135)	4.2051E-05 (304)
33	9.0740E-05 (179)	7.4191E-05 (48)	7.1233E-05 (107)	5.9854E-05 (107)	4.6200E-05 (16)
34	1.0904E-04 (42)	9.9610E-05 (48)	1.1779E-04 (16)	8.9366E-05 (16)	6.3254E-05 (16)
35	1.4598E-04 (269)	1.1939E-04 (269)	1.0274E-04 (16)	6.8173E-05 (31)	6.9107E-05 (22)
36	4.4379E-04 (319)	4.3340E-04 (315)	3.3080E-04 (315)	1.8003E-04 (356)	1.0285E-04 (116)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.0066E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.3142E-03 (321)	8.7680E-04 (262)	5.9201E-04 (327)	5.8001E-04 (262)	4.2071E-04 (310)
2	1.5284E-03 (293)	1.0144E-03 (326)	6.0688E-04 (326)	7.3424E-04 (341)	5.9764E-04 (341)
3	1.2901E-03 (255)	8.8800E-04 (276)	5.9214E-04 (111)	8.4328E-04 (294)	8.2504E-04 (234)
4	1.5329E-03 (292)	8.6058E-04 (277)	5.9853E-04 (6)	5.7307E-04 (260)	3.5407E-04 (161)
5	1.4708E-03 (325)	8.5900E-04 (277)	5.5977E-04 (277)	6.0839E-04 (139)	4.7144E-04 (141)
6	1.1910E-03 (320)	7.9167E-04 (320)	5.0852E-04 (187)	5.1480E-04 (239)	5.6081E-04 (238)
7	9.8498E-04 (253)	6.1729E-04 (253)	5.4565E-04 (207)	4.5026E-04 (207)	3.4559E-04 (209)
8	1.2709E-03 (295)	8.6452E-04 (322)	4.9692E-04 (322)	6.6212E-04 (214)	4.9893E-04 (214)
9	1.4199E-03 (295)	6.9948E-04 (295)	4.1325E-04 (322)	4.4992E-04 (174)	4.7570E-04 (174)
10	1.2839E-03 (295)	7.3785E-04 (236)	3.9516E-04 (306)	4.5273E-04 (1)	4.2852E-04 (1)
11	1.3850E-03 (301)	7.7222E-04 (280)	5.5664E-04 (280)	4.7569E-04 (330)	3.7893E-04 (330)
12	1.2508E-03 (301)	6.8301E-04 (280)	4.9316E-04 (280)	3.9517E-04 (295)	4.3150E-04 (280)
13	1.0205E-03 (291)	6.9161E-04 (291)	4.6689E-04 (295)	5.3498E-04 (287)	5.4653E-04 (192)
14	1.3774E-03 (290)	9.2188E-04 (290)	4.6450E-04 (290)	6.9525E-04 (251)	5.1601E-04 (251)
15	1.1557E-03 (309)	6.7317E-04 (290)	6.4831E-04 (240)	6.6316E-04 (240)	5.3399E-04 (193)
16	1.3893E-03 (331)	7.9975E-04 (331)	5.9114E-04 (331)	7.8903E-04 (283)	5.7284E-04 (283)
17	1.1672E-03 (218)	8.3882E-04 (359)	7.3170E-04 (359)	6.6974E-04 (231)	5.0982E-04 (204)
18	1.2091E-03 (353)	7.1294E-04 (281)	5.7259E-04 (281)	4.4026E-04 (252)	3.9297E-04 (20)
19	1.0875E-03 (338)	6.9811E-04 (338)	3.9581E-04 (281)	4.8735E-04 (333)	4.1845E-04 (333)
20	9.9408E-04 (338)	6.2198E-04 (338)	4.0661E-04 (280)	2.5825E-04 (347)	2.0068E-04 (347)
21	8.5151E-04 (333)	7.8330E-04 (333)	7.5957E-04 (30)	4.2659E-04 (30)	4.0243E-04 (29)
22	1.1965E-03 (152)	8.3148E-04 (206)	6.7372E-04 (206)	4.5610E-04 (126)	5.9799E-04 (282)
23	9.2697E-04 (343)	7.5263E-04 (343)	5.5749E-04 (317)	5.1214E-04 (317)	6.3080E-04 (282)
24	8.2082E-04 (302)	8.0608E-04 (302)	6.5699E-04 (302)	4.3050E-04 (302)	4.5716E-04 (283)
25	7.1232E-04 (302)	6.8545E-04 (302)	4.7060E-04 (302)	4.8357E-04 (363)	5.8095E-04 (363)
26	6.9964E-04 (317)	6.0028E-04 (317)	4.4173E-04 (265)	2.4938E-04 (317)	2.0403E-04 (349)
27	6.3190E-04 (317)	5.6632E-04 (314)	5.4337E-04 (350)	3.5221E-04 (350)	3.4699E-04 (349)
28	8.5562E-04 (314)	7.9616E-04 (314)	5.1325E-04 (312)	3.7592E-04 (312)	2.1580E-04 (232)
29	6.3086E-04 (314)	5.6632E-04 (314)	4.3426E-04 (334)	3.0902E-04 (125)	2.8665E-04 (349)
30	5.1551E-04 (33)	5.8815E-04 (33)	4.0359E-04 (285)	2.8094E-04 (46)	2.2054E-04 (304)
31	6.0840E-04 (179)	5.3800E-04 (33)	5.0048E-04 (285)	3.7723E-04 (285)	3.7906E-04 (349)
32	7.1003E-04 (179)	4.4284E-04 (179)	2.6162E-04 (179)	1.7904E-04 (135)	2.4541E-04 (304)
33	6.3274E-04 (179)	5.0253E-04 (48)	3.9665E-04 (107)	2.3530E-04 (107)	2.1669E-04 (311)
34	7.7391E-04 (42)	7.0588E-04 (48)	5.1209E-04 (16)	3.6624E-04 (16)	2.8689E-04 (289)
35	9.5185E-04 (269)	7.7365E-04 (269)	5.8523E-04 (16)	3.7376E-04 (168)	3.8519E-04 (289)
36	2.0066E-03 (308)	1.4191E-03 (319)	1.0565E-03 (356)	6.4877E-04 (356)	4.8628E-04 (116)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
319	4.4379E-04	36	0.71
315	4.3340E-04	36	1.33
309	4.3193E-04	36	0.71
331	4.0106E-04	16	0.71
222	3.8509E-04	16	0.71
241	3.5585E-04	16	4.65
231	3.5022E-04	16	0.71
356	3.4333E-04	36	1.33
342	3.4227E-04	16	0.71
340	3.3778E-04	5	0.71
332	3.3777E-04	17	0.71
298	3.3244E-04	2	0.71
218	3.2534E-04	16	0.71
284	3.2420E-04	36	0.71
355	3.1715E-04	36	1.33
292	3.1508E-04	4	0.71
321	3.0573E-04	36	0.71
124	3.0322E-04	17	0.71
354	3.0116E-04	36	0.71
326	2.9718E-04	2	0.71

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

STACK # 1--KINGSTON STACKS#1-4, MAX.LOAD SRC SO2
STACK # 2--KINGSTON STACKS#5-9, MAX.LOAD SRC SO2

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	750.00	0.00	76.20	4.27	17.90	427.40	256.33
2	NOM	1177.00	0.00	91.44	5.03	17.10	421.90	339.80

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO=10 JDAY=275
ISTAB= 4 4 4 4 3 4 4 4 3 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 6.4 8.4 9.8 10.3 10.9 8.7 8.9 9.4 8.4 7.6 8.1 7.8 7.4 7.0 7.4 7.7 8.2 8.0 8.1 7.4 6.9 7.5 7.7 5.4
TEMP= 289. 289. 287. 286. 286. 285. 284. 283. 284. 285. 285. 286. 287. 288. 288. 289. 289. 288. 287. 285. 284. 283. 283. 282.
AFV= 160. 162. 162. 163. 164. 165. 161. 163. 164. 165. 167. 170. 160. 163. 188. 181. 182. 178. 178. 200. 205. 201. 199. 198.
AFVR= 160. 162. 162. 163. 164. 165. 161. 163. 164. 165. 167. 170. 160. 163. 188. 181. 182. 178. 178. 200. 205. 201. 199. 198.
HLH1= 1433. 1433. 1433. 1433. 1433. 1433. 1433. 1463. 1493. 1523. 1553. 1583.
1613. 1643. 1676. 1676. 1676. 1676. 1676. 1676. 1676. 1676. 1676. 1676.

JYR=76 IHO= 1 JDAY= 4
ISTAB= 3 3 4 3 3 4 4 4 3 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 5.0 7.2 7.6 7.3 8.7 7.9 7.7 6.4 6.1 5.4 6.2 7.5 6.2 5.7 6.3 6.4 5.9 6.4 6.7 8.1 8.6 7.1 6.2 6.0
TEMP= 272. 271. 270. 270. 268. 267. 266. 266. 266. 266. 267. 267. 268. 269. 270. 270. 270. 269. 268. 267. 267. 266. 266. 265.
AFV= 154. 152. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
AFVR= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
HLH1= 400. 400. 400. 400. 400. 400. 400. 438. 476. 514. 552. 590.
628. 666. 710. 710. 710. 710. 710. 710. 710. 710. 710. 710.

JYR=76 IHO= 1 JDAY= 8
ISTAB= 4 4 3 3 3 3 3 3 3 2 1 1 1 1 1 1 1 2 3 3 4 3 4 4 4
AWS= 7.2 4.0 10.6 11.0 10.3 11.2 10.7 8.2 9.6 9.3 9.2 9.0 6.6 6.9 6.8 7.5 7.2 7.7 5.8 5.9 5.8 6.8 6.1 5.1
TEMP= 276. 275. 274. 272. 271. 270. 269. 268. 268. 267. 267. 268. 267. 267. 267. 266. 266. 265. 264. 264. 264. 263. 262. 262.
AFV= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
AFVR= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
HLH1= 853. 853. 853. 853. 853. 853. 853. 868. 883. 898. 913. 928.
943. 958. 975. 975. 975. 975. 975. 975. 975. 975. 975. 975.

JYR=76 IHO= 1 JDAY= 17
ISTAB= 3 3 3 3 3 3 3 3 3 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4 4
AWS= 10.1 8.7 10.6 9.3 7.2 8.9 10.2 8.9 7.7 8.2 10.2 10.6 10.5 10.1 10.2 9.1 8.1 8.1 6.1 5.7 6.1 5.5 4.6 5.7
TEMP= 273. 272. 272. 271. 270. 270. 269. 267. 267. 267. 267. 268. 268. 269. 268. 268. 267. 267. 267. 267. 266. 266. 265. 265.
AFV= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 161. 162. 166. 168. 168. 170. 171. 185. 176.
AFVR= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 161. 162. 166. 168. 168. 170. 171. 185. 176.
HLH1= 400. 400. 400. 400. 400. 400. 400. 423. 454. 481. 508. 535.
562. 589. 617. 617. 617. 617. 617. 617. 617. 617. 617. 617.

```
JYR=76 IMO= 1 JDAY= 27
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    1    1    1    3    3    4    4    4    4    4    4
AWS=  6.4  5.2  6.4  7.2  7.6  8.0  8.1  8.9  8.8  8.4  8.1  7.5  8.2  7.5  9.1  6.7  8.0  7.2  5.7  3.9  2.8  2.3  4.2  6.3
TEMP= 275. 275. 275. 274. 274. 274. 274. 274. 274. 273. 273. 273. 273. 273. 273. 273. 273. 272. 272. 272. 272. 271. 271. 270. 270.
AFV=  170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
AFVR= 170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
HLHI=  457.  457.  457.  457.  457.  457.  457.  521.  585.  649.  713.  777.
       841.  905.  975.  975.  975.  975.  975.  975.  975.  975.  975.  975.


JYR=76 IMO= 3 JDAY= 70
ISTAR=  4    4    4    4    4    4    4    4    3    3    3    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.1  4.3  4.1  3.5  3.6  4.4  3.3  2.7  1.4  0.9  1.7  2.4  2.6  2.5  2.5  4.0  4.4  3.8  3.9  3.8  1.2  1.0  0.5  0.7
TEMP= 276. 276. 275. 275. 274. 273. 273. 273. 274. 276. 278. 281. 283. 284. 285. 287. 287. 287. 286. 285. 283. 282. 280. 279.
AFV=  155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
AFVR= 155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IMO= 3 JDAY= 78
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    2    3    3    4    4    4    4    4    4
AWS=  1.5  2.7  3.3  2.5  2.0  2.7  3.2  3.9  3.2  4.8  4.4  4.5  5.0  6.3  6.0  6.3  6.9  5.6  5.9  6.7  6.8  6.8  5.1  4.8
TEMP= 273. 272. 271. 271. 271. 271. 271. 271. 273. 278. 282. 285. 288. 289. 291. 291. 291. 290. 289. 288. 288. 287. 286. 284.
AFV=  268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
AFVR= 268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
HLHI=    0.    0.    0.    0.    0.    0.    0.  228.  456.  684.  912. 1140.
      1368. 1596. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829.


JYR=76 IMO= 3 JDAY= 84
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  3.5  3.9  4.3  4.6  3.5  3.7  1.8  1.6  2.3  3.2  6.4  6.5  7.0  7.7  7.3  7.4  8.5  6.5  6.9  5.3  5.5  6.7  5.1
TEMP= 279. 278. 277. 276. 276. 275. 275. 275. 278. 284. 287. 289. 291. 291. 293. 293. 293. 293. 291. 291. 291. 289. 286. 285.
AFV=   61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
AFVR=  61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0. 1249. 2498. 3747. 4996. 6245.
      7494. 8743. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999.


JYR=76 IMO= 4 JDAY= 94
ISTAR=  4    4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  1.8  1.3  0.9  1.6  1.6  1.6  0.6  0.4  0.9  1.5  2.2  2.7  4.2  5.3  5.6  5.1  5.6  4.9  5.1  5.9  6.6  5.9  7.6  5.9
TEMP= 281. 280. 279. 278. 277. 277. 276. 277. 280. 284. 289. 292. 295. 296. 298. 298. 298. 298. 297. 295. 293. 292. 291. 290.
AFV=   52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
AFVR=  52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
HLHI=  400.  400.  400.  400.  400.  400.  400.  537.  674.  811.  948. 1085.
      1222. 1359. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499.


JYR=76 IMO= 4 JDAY=101
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.5  4.1  5.1  4.1  3.9  3.5  3.3  3.0  2.5  2.4  2.3  2.5  2.1  2.8  3.0  3.3  3.4  3.6  3.7  3.7  3.8  3.8  3.0  4.1
TEMP= 279. 277. 276. 276. 275. 274. 274. 275. 279. 283. 286. 287. 289. 290. 291. 293. 293. 293. 293. 291. 288. 286. 284. 283.
AFV=  185. 192. 219. 229. 231. 241. 241. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
AFVR= 186. 192. 219. 229. 231. 241. 241. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
HLHI=    0.    0.    0.    0.    0.    0.    0.  186.  372.  558.  744.  930.
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```
JYR=76 IMO= 4 JDAY=105
ISTAR=  4    4    4    4    4    4    4    2    4    2    1    1    1    1    2    1    1    2    4    4    4    4    4    4
AWS=  2.6  1.8  1.5  1.9  1.3  1.3  0.7  1.2  0.8  1.1  2.0  2.9  3.6  3.9  2.5  3.6  1.3  1.3  3.8  4.8  5.4  5.3  3.7  3.5
TEMP= 283. 283. 282. 280. 280. 280. 280. 281. 284. 288. 292. 295. 296. 297. 298. 299. 299. 298. 297. 295. 294. 293. 292. 291.
AFV=  124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
AFVR= 124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
HLH1=    0.   0.   0.   0.   0.   0.   0.   0. 266. 532. 798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IMO= 4 JDAY=107
ISTAR=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  3.4  3.6  3.6  2.5  1.2  0.9  0.6  2.2  2.3  2.4  3.9  6.1  6.4  5.5  4.1  4.3  4.0  2.8  3.6  4.2  3.3  3.3  4.0  4.3
TEMP= 288. 287. 286. 286. 286. 285. 285. 286. 289. 293. 295. 297. 298. 298. 299. 299. 298. 298. 297. 295. 293. 292. 291. 289.
AFV=   58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
AFVR=  58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
HLH1=  244.  244.  244.  244.  244.  244.  244.  244.  491.  738.  985. 1232. 1479.
      1726. 1973. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225.


JYR=76 IMO= 4 JDAY=112
ISTAR=  4    4    4    4    4    4    4    4    4    1    1    1    1    3    2    2    3    3    4    4    4    4    4    4
AWS=  3.6  3.8  3.7  2.5  3.3  3.6  3.6  3.8  3.4  2.2  5.0  8.0 10.5 10.8  8.8 10.1  9.9  9.3  8.1  7.7  5.4  4.1  4.9  4.7
TEMP= 291. 290. 289. 289. 289. 289. 289. 290. 290. 292. 295. 296. 297. 297. 297. 298. 298. 297. 295. 294. 291. 290. 289. 288.
AFV=   51.  42.  17.  19.  26.  80.  13.  32.  32. 354.  22.  28.  23.  27.  29.  23.  21.  18.  17.  24.  46. 105.  95.  99.
AFVR=  51.  42.  17.  19.  26.  80.  13.  32.  32. 354.  22.  28.  23.  27.  29.  23.  21.  18.  17.  24.  46. 105.  95.  99.
HLH1=  620.  620.  620.  620.  620.  620.  620.  790.  960. 1130. 1300. 1470.
      1640. 1810. 1981. 1981. 1981. 1981. 1981. 1981. 1981. 1981. 1981. 1981.


JYR=76 IMO= 4 JDAY=117
ISTAR=  3    3    3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    4    4    4    4    4    4
AWS=  5.6  6.3  4.3  4.8  5.1  5.2  4.8  5.1  4.2  4.3  3.7  4.2  5.7  6.4  5.9  4.6  5.1  5.9  4.3  4.2  4.5  1.9  1.7  2.3
TEMP= 282. 281. 281. 280. 280. 279. 278. 279. 279. 279. 279. 280. 281. 282. 283. 284. 285. 285. 284. 283. 282. 280. 279. 278.
AFV=  103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
AFVR= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
HLH1=  457.  457.  457.  457.  457.  457.  457.  590.  723.  856.  989. 1122.
      1255. 1388. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 4 JDAY=118
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.3  2.7  3.6  3.4  4.3  5.2  4.3  2.5  2.1  2.4  5.0  5.1  3.8  4.4  5.4  5.4  6.3  7.3  6.1  6.3  5.7  5.8  4.7  3.5
TEMP= 277. 277. 276. 276. 275. 275. 275. 277. 280. 282. 284. 286. 287. 288. 289. 290. 290. 289. 288. 287. 286. 285. 283. 283.
AFV=  226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
AFVR= 226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
HLH1=  914.  914.  914.  914.  914.  914.  914.  952.  990. 1028. 1066. 1104.
      1142. 1180. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219.


JYR=76 IMO= 5 JDAY=126
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.0  1.2  1.2  1.5  1.3  0.9  0.4  0.9  1.1  2.9  3.7  4.8  4.3  5.2  5.1  4.6  5.3  4.8  5.6  6.3  6.4  5.8  4.1  4.4
TEMP= 280. 279. 279. 278. 278. 278. 278. 280. 284. 287. 290. 292. 294. 295. 296. 297. 297. 296. 296. 294. 293. 290. 289. 290.
AFV=   42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
AFVR=  42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
HLH1=    0.   0.   0.   0.   0.   0.   0.  156.  312.  468.  624.  780.
      936. 1092. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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JYR=76 IMO= 5 JDAY=128
ISTAB=  4    4    4    4    4    4    4    4    3    2    2    1    1    1    1    1    1    1    3    3    4    3    3    3
AWS=  1.9  2.7  3.3  4.0  4.1  3.8  3.3  2.3  2.9  1.5  3.2  3.3  3.9  5.9  5.6  5.9  6.4  7.2  7.2  7.8  8.4  6.4  5.4  2.8
TEMP= 290. 290. 290. 290. 290. 290. 290. 290. 291. 291. 292. 292. 293. 292. 292. 291. 289. 287. 286. 285. 285. 284. 284. 284.
AFV=   66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
AFVR=  66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
HLH1=  762.  762.  762.  762.  762.  762.  762.  762.  800.  838.  876.  914.  952.
       990. 1028. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067.


JYR=76 IMO= 5 JDAY=140
ISTAB=  4    4    4    4    4    4    4    2    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.4  1.9  2.4  3.2  1.6  2.1  2.8  0.5  0.8  1.3  1.7  1.7  3.7  3.3  3.7  3.7  3.8  3.5  4.7  4.2  4.9  4.7  4.1  2.8
TEMP= 281. 280. 279. 279. 279. 278. 278. 281. 284. 287. 289. 290. 291. 292. 293. 294. 294. 294. 293. 292. 290. 288. 286. 285.
AFV=  177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 130. 147. 135.
AFVR= 177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 130. 147. 135.
HLH1=   40.   40.   40.   40.   40.   40.   40.  225.  410.  595.  780.  965.
      1150. 1335. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527.


JYR=76 IMO= 5 JDAY=141
ISTAB=  4    4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  2.1  1.9  1.9  0.9  1.2  1.2  0.7  0.9  1.3  2.6  3.1  3.0  2.9  3.1  2.3  3.1  3.1  3.2  4.4  4.7  3.6  2.3  2.7
TEMP= 283. 283. 282. 281. 280. 280. 280. 282. 286. 289. 292. 293. 294. 295. 296. 297. 297. 297. 297. 295. 292. 290. 289. 288.
AFV=  106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
AFVR= 106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
HLH1=    0.    0.    0.    0.    0.    0.    0.  190.  380.  570.  760.  950.
      1140. 1330. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 5 JDAY=142
ISTAB=  4    4    4    4    4    4    4    4    2    2    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS=  2.5  2.2  2.6  2.5  1.6  0.7  0.5  0.8  0.8  1.1  2.2  2.0  2.7  2.9  2.5  2.9  2.2  3.0  2.5  2.8  4.8  3.3  3.3  3.8
TEMP= 286. 286. 285. 285. 284. 283. 283. 285. 288. 291. 294. 296. 297. 298. 298. 299. 299. 299. 298. 297. 294. 293. 291. 290.
AFV=   84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
AFVR=  84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
HLH1=    0.    0.    0.    0.    0.    0.    0.  171.  342.  513.  684.  855.
      1026. 1197. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372.

YEAR BASED ON  20. DAYS
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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 1.4279E-04 DIRECTION= 16 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1		8.53117E-05	6.94519E-05	5.99104E-05	3.97633E-05	2.68630E-05
2		8.21807E-05	6.18173E-05	4.87144E-05	3.38173E-05	2.39928E-05
3		6.83279E-05	4.77874E-05	3.46905E-05	2.38402E-05	1.93770E-05
4		6.07825E-05	4.32497E-05	3.21703E-05	2.24661E-05	1.83544E-05
5		5.24605E-05	3.90141E-05	2.93976E-05	2.23636E-05	2.04036E-05
6		3.53766E-05	2.71712E-05	2.14888E-05	1.72407E-05	1.52327E-05
7		2.06136E-05	1.73050E-05	1.52883E-05	1.40325E-05	1.34722E-05
8		1.44876E-05	1.37045E-05	1.32841E-05	1.31019E-05	1.34429E-05
9		1.31635E-05	1.30601E-05	1.30190E-05	1.30060E-05	1.30014E-05
10		1.30344E-05	1.30103E-05	1.31491E-05	1.40014E-05	1.43256E-05
11		1.32860E-05	1.31038E-05	1.30341E-05	1.30149E-05	1.30048E-05
12		1.50433E-05	1.38464E-05	1.33504E-05	1.37916E-05	1.46064E-05
13		2.32664E-05	1.76378E-05	1.52346E-05	1.60459E-05	1.64668E-05
14		4.97502E-05	3.12378E-05	2.17160E-05	1.92871E-05	1.92616E-05
15		1.01428E-04	6.24188E-05	4.15571E-05	3.07140E-05	2.49894E-05
16		1.42794E-04	9.12793E-05	7.61992E-05	7.52062E-05	5.91496E-05
17		1.24335E-04	7.66196E-05	5.56488E-05	4.51053E-05	3.56084E-05
18		7.48234E-05	4.50822E-05	3.06797E-05	2.21116E-05	1.77822E-05
19		3.74466E-05	2.49301E-05	1.91836E-05	1.57664E-05	1.43226E-05
20		1.98284E-05	1.62657E-05	1.48748E-05	1.38822E-05	1.34171E-05
21		1.42465E-05	1.35844E-05	1.33867E-05	1.36725E-05	1.41478E-05
22		1.31389E-05	1.30637E-05	1.30415E-05	1.30176E-05	1.30060E-05
23		1.30091E-05	1.30051E-05	1.30123E-05	1.30067E-05	1.30016E-05
24		1.30006E-05	1.30151E-05	1.32319E-05	1.32522E-05	1.31233E-05
25		1.30030E-05	1.30386E-05	1.36650E-05	1.38814E-05	1.35472E-05
26		1.30207E-05	1.30467E-05	1.32780E-05	1.32735E-05	1.31309E-05
27		1.30960E-05	1.31817E-05	1.33336E-05	1.31940E-05	1.30881E-05
28		1.32435E-05	1.35123E-05	1.40395E-05	1.36940E-05	1.33737E-05
29		1.33321E-05	1.37250E-05	1.45336E-05	1.40724E-05	1.36083E-05
30		1.32440E-05	1.35125E-05	1.40395E-05	1.36940E-05	1.33737E-05
31		1.31055E-05	1.31862E-05	1.33259E-05	1.31985E-05	1.30868E-05
32		1.31210E-05	1.31029E-05	1.30942E-05	1.30321E-05	1.30106E-05
33		1.36827E-05	1.35362E-05	1.33415E-05	1.31190E-05	1.30418E-05
34		1.65139E-05	1.58877E-05	1.50295E-05	1.38014E-05	1.33154E-05
35		2.67702E-05	2.49102E-05	2.22253E-05	1.70884E-05	1.51028E-05
36		1.38434E-04	1.92610E-04	1.05687E-04	6.22117E-05	3.76944E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 4.1971E-04 DIRECTION=160. DISTANCE= 0.7 KM DAY=222.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.4923E-04 (298)	1.5172E-04 (321)	1.3874E-04 (356)	9.7644E-05 (356)	6.5442E-05 (355)
2	3.1496E-04 (298)	2.2032E-04 (326)	1.6152E-04 (326)	9.8648E-05 (326)	6.7700E-05 (292)
3	2.6855E-04 (298)	1.5814E-04 (298)	1.0104E-04 (298)	7.0608E-05 (298)	4.3524E-05 (298)
4	2.8190E-04 (292)	1.8612E-04 (292)	1.2599E-04 (340)	7.1893E-05 (340)	4.3496E-05 (340)
5	3.4021E-04 (340)	2.4350E-04 (340)	1.7156E-04 (340)	1.1149E-04 (340)	7.5524E-05 (340)
6	2.4781E-04 (340)	1.6690E-04 (340)	1.0222E-04 (340)	5.2044E-05 (340)	3.1923E-05 (340)
7	1.0384E-04 (340)	6.4373E-05 (340)	3.7656E-05 (340)	2.2293E-05 (340)	1.7072E-05 (321)
8	3.2136E-05 (340)	2.1925E-05 (340)	1.6460E-05 (340)	1.4041E-05 (340)	2.1401E-05 (321)
9	1.5179E-05 (340)	1.3784E-05 (340)	1.3227E-05 (340)	1.3049E-05 (340)	1.3012E-05 (340)
10	1.3452E-05 (342)	1.3140E-05 (342)	1.5916E-05 (331)	3.3021E-05 (331)	3.9510E-05 (331)
11	1.7353E-05 (342)	1.4728E-05 (342)	1.3575E-05 (342)	1.3215E-05 (342)	1.3075E-05 (342)
12	3.7203E-05 (342)	2.4539E-05 (342)	1.8062E-05 (342)	2.4079E-05 (331)	4.2015E-05 (331)
13	9.6266E-05 (342)	5.7613E-05 (342)	3.4775E-05 (342)	5.1430E-05 (331)	6.6331E-05 (331)
14	2.0505E-04 (342)	1.2290E-04 (342)	6.7870E-05 (342)	5.2832E-05 (331)	6.9553E-05 (331)
15	3.2793E-04 (342)	2.0392E-04 (342)	1.2606E-04 (222)	1.3669E-04 (222)	1.0287E-04 (222)
16	4.1971E-04 (222)	2.5716E-04 (331)	2.1933E-04 (222)	3.4294E-04 (241)	2.9015E-04 (241)
17	4.0220E-04 (124)	2.2772E-04 (124)	1.5180E-04 (231)	1.6343E-04 (231)	1.1861E-04 (231)
18	3.1641E-04 (124)	1.6812E-04 (332)	1.0350E-04 (332)	5.6501E-05 (332)	4.2509E-05 (231)
19	1.7918E-04 (124)	9.4061E-05 (332)	6.5593E-05 (332)	3.9339E-05 (332)	2.6991E-05 (332)
20	7.1342E-05 (124)	4.2532E-05 (332)	3.5676E-05 (332)	2.5197E-05 (332)	1.9315E-05 (332)
21	2.4796E-05 (124)	1.9664E-05 (332)	1.8619E-05 (332)	2.3062E-05 (331)	3.4504E-05 (331)
22	1.4313E-05 (124)	1.3882E-05 (332)	1.3719E-05 (332)	1.3307E-05 (332)	1.3109E-05 (332)
23	1.3102E-05 (332)	1.3065E-05 (332)	1.3199E-05 (315)	1.3119E-05 (315)	1.3028E-05 (315)
24	1.3009E-05 (315)	1.3300E-05 (315)	1.7637E-05 (315)	1.8044E-05 (315)	1.5467E-05 (315)
25	1.3060E-05 (315)	1.3773E-05 (315)	2.6300E-05 (315)	3.0628E-05 (315)	2.3944E-05 (315)
26	1.3413E-05 (315)	1.3933E-05 (315)	1.8561E-05 (315)	1.8470E-05 (315)	1.5618E-05 (315)
27	1.4921E-05 (315)	1.6634E-05 (315)	1.9671E-05 (315)	1.6880E-05 (315)	1.4762E-05 (315)
28	1.7870E-05 (315)	2.3245E-05 (315)	3.3790E-05 (315)	2.6880E-05 (315)	2.0475E-05 (315)
29	1.9641E-05 (315)	2.7501E-05 (315)	4.3672E-05 (315)	3.4448E-05 (315)	2.5166E-05 (315)
30	1.7870E-05 (315)	2.3245E-05 (315)	3.3789E-05 (315)	2.6879E-05 (315)	2.0475E-05 (315)
31	1.4920E-05 (315)	1.6613E-05 (315)	1.9473E-05 (315)	1.6761E-05 (315)	1.4734E-05 (315)
32	1.4739E-05 (355)	1.4812E-05 (355)	1.3934E-05 (315)	1.3428E-05 (315)	1.3152E-05 (315)
33	2.1934E-05 (355)	2.1129E-05 (355)	1.8617E-05 (355)	1.5083E-05 (355)	1.3771E-05 (355)
34	4.0498E-05 (355)	4.1204E-05 (355)	3.5846E-05 (355)	2.3141E-05 (355)	1.7454E-05 (355)
35	8.9504E-05 (355)	7.5372E-05 (355)	6.9018E-05 (355)	4.0951E-05 (355)	2.6642E-05 (354)
36	4.0970E-04 (308)	3.3922E-04 (319)	3.4482E-04 (356)	2.1379E-04 (356)	1.2092E-04 (356)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOX--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.9659E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.2653E-03 (321)	8.4003E-04 (321)	4.8287E-04 (356)	3.2748E-04 (356)	2.8381E-04 (355)
2	1.4049E-03 (326)	1.0147E-03 (326)	5.9364E-04 (326)	5.2154E-04 (292)	4.1572E-04 (292)
3	1.2424E-03 (298)	7.3776E-04 (298)	4.7357E-04 (298)	3.9318E-04 (298)	2.1235E-04 (298)
4	1.4206E-03 (292)	7.9977E-04 (292)	4.9454E-04 (292)	2.7899E-04 (292)	1.8083E-04 (284)
5	1.3643E-03 (340)	8.4234E-04 (340)	5.4652E-04 (340)	3.8949E-04 (340)	2.9371E-04 (340)
6	1.0038E-03 (340)	5.9895E-04 (340)	2.9916E-04 (340)	2.2862E-04 (321)	1.5589E-04 (321)
7	4.0364E-04 (340)	2.1965E-04 (340)	1.0280E-04 (340)	7.4092E-05 (321)	4.5381E-05 (321)
8	9.5806E-05 (340)	4.9378E-05 (340)	2.5743E-05 (340)	1.8088E-05 (321)	8.0205E-05 (321)
9	2.2438E-05 (340)	1.6197E-05 (340)	1.3837E-05 (340)	1.3356E-05 (331)	1.3068E-05 (331)
10	1.6515E-05 (342)	1.4078E-05 (342)	3.6485E-05 (331)	1.7316E-04 (331)	2.2508E-04 (331)
11	4.5614E-05 (342)	2.5820E-05 (342)	1.7063E-05 (342)	1.4085E-05 (342)	1.3362E-05 (342)
12	1.8299E-04 (342)	9.2377E-05 (342)	4.3567E-05 (342)	1.0136E-04 (331)	2.4507E-04 (331)
13	5.3016E-04 (342)	2.7967E-04 (342)	1.2782E-04 (342)	3.1418E-04 (331)	4.3792E-04 (331)
14	9.8294E-04 (342)	5.3326E-04 (342)	2.4681E-04 (342)	2.7826E-04 (331)	4.4642E-04 (331)
15	1.2174E-03 (342)	6.7667E-04 (241)	3.7939E-04 (241)	4.6755E-04 (222)	2.9836E-04 (222)
16	1.4223E-03 (331)	8.0574E-04 (342)	5.5030E-04 (331)	6.8607E-04 (222)	6.1125E-04 (241)
17	1.2661E-03 (218)	7.6157E-04 (332)	4.4026E-04 (332)	6.8393E-04 (231)	5.3228E-04 (231)
18	1.4968E-03 (124)	7.1886E-04 (124)	3.0412E-04 (124)	2.3321E-04 (231)	1.9426E-04 (231)
19	1.0917E-03 (124)	5.1171E-04 (124)	2.7876E-04 (332)	1.6983E-04 (332)	1.0068E-04 (332)
20	4.3907E-04 (124)	1.8888E-04 (124)	1.5870E-04 (332)	9.9595E-05 (332)	5.9188E-05 (332)
21	1.0332E-04 (124)	5.2506E-05 (332)	5.3520E-05 (332)	9.3427E-05 (331)	1.8502E-04 (331)
22	2.3294E-05 (124)	1.8940E-05 (332)	1.8478E-05 (332)	1.5403E-05 (332)	1.3859E-05 (332)
23	1.3531E-05 (124)	1.3478E-05 (332)	1.4591E-05 (315)	1.3948E-05 (315)	1.3226E-05 (315)
24	1.3074E-05 (315)	1.5397E-05 (315)	5.0095E-05 (315)	5.3353E-05 (315)	3.2733E-05 (315)
25	1.3478E-05 (315)	1.9182E-05 (315)	1.1940E-04 (315)	1.5403E-04 (315)	1.0055E-04 (315)
26	1.6397E-05 (315)	2.0466E-05 (315)	5.7486E-05 (315)	5.6764E-05 (315)	3.3947E-05 (315)
27	2.8364E-05 (315)	4.2074E-05 (315)	6.6372E-05 (315)	4.4037E-05 (315)	2.7095E-05 (315)
28	5.1957E-05 (315)	9.4961E-05 (315)	1.7932E-04 (315)	1.2404E-04 (315)	7.2797E-05 (315)
29	6.6129E-05 (315)	1.2900E-04 (315)	2.5838E-04 (315)	1.8459E-04 (315)	1.1032E-04 (315)
30	5.1957E-05 (315)	9.4959E-05 (315)	1.7931E-04 (315)	1.2404E-04 (315)	7.2797E-05 (315)
31	2.8359E-05 (315)	4.1904E-05 (315)	6.4781E-05 (315)	4.3088E-05 (315)	2.6869E-05 (315)
32	2.6058E-05 (355)	2.2828E-05 (355)	2.0427E-05 (315)	1.6419E-05 (315)	1.4215E-05 (315)
33	7.6321E-05 (355)	7.0002E-05 (355)	5.0867E-05 (355)	2.6625E-05 (355)	1.8096E-05 (355)
34	1.9871E-04 (355)	1.8798E-04 (355)	1.4310E-04 (355)	6.6128E-05 (355)	3.5962E-05 (355)
35	3.2384E-04 (355)	3.3653E-04 (355)	2.6423E-04 (355)	1.4180E-04 (355)	7.9532E-05 (355)
36	1.9659E-03 (308)	1.2598E-03 (354)	1.1761E-03 (356)	7.8963E-04 (356)	4.4543E-04 (356)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
222	4.1971E-04	16	0.71
308	4.0970E-04	36	0.71
124	4.0220E-04	17	0.71
331	3.9394E-04	16	0.71
231	3.9039E-04	16	0.71
319	3.8173E-04	16	0.71
342	3.5601E-04	16	0.71
356	3.4482E-04	36	2.49
241	3.4294E-04	16	4.65
218	3.4281E-04	16	0.71
340	3.4021E-04	5	0.71
315	3.3102E-04	36	1.33
332	3.2804E-04	17	0.71
298	3.1496E-04	2	0.71
326	3.0116E-04	2	0.71
321	3.0036E-04	36	0.71
292	2.8190E-04	4	0.71
354	2.7635E-04	36	0.71
355	2.6036E-04	36	1.33
284	2.5017E-04	36	0.71

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PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY    PROJECT 7101

SHAWVILLE PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAR= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048E006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     52.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1080.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1350.0	1300.0	1400.0	1880.0	2160.0
2	1200.0	1200.0	1600.0	2174.0	2100.0
3	1160.0	1460.0	1590.0	1760.0	2000.0
4	1120.0	1400.0	1540.0	1600.0	1900.0
5	1200.0	1360.0	1520.0	1600.0	1800.0
6	1250.0	1340.0	1350.0	1567.0	1560.0
7	1220.0	1320.0	1260.0	1560.0	1500.0
8	1180.0	1300.0	1540.0	1500.0	1481.0
9	1100.0	1300.0	1340.0	1627.0	1549.0
10	1070.0	1320.0	1584.0	1639.0	1564.0
11	1050.0	1320.0	1580.0	1766.0	1668.0
12	1160.0	1060.0	1340.0	1836.0	1744.0
13	1320.0	1150.0	1300.0	1720.0	1700.0
14	1400.0	1420.0	1420.0	1743.0	1800.0
15	1420.0	1520.0	1605.0	1700.0	1900.0
16	1440.0	1590.0	1580.0	1900.0	2100.0
17	1440.0	1300.0	1580.0	1900.0	2100.0
18	1440.0	1260.0	1260.0	1780.0	1840.0
19	1420.0	1200.0	1320.0	1700.0	1620.0
20	1400.0	1100.0	1400.0	1625.0	1540.0
21	1200.0	1080.0	1480.0	1540.0	1520.0
22	1060.0	1300.0	1572.0	1440.0	1620.0
23	1050.0	1460.0	1540.0	1120.0	1537.0
24	1200.0	1500.0	1540.0	1551.0	1796.0
25	1200.0	1400.0	1540.0	1505.0	1773.0
26	1260.0	1440.0	1520.0	1660.0	2120.0
27	1380.0	1460.0	1560.0	1880.0	2320.0
28	1440.0	1400.0	1540.0	1760.0	2251.0
29	1460.0	1440.0	1560.0	2140.0	2224.0
30	1460.0	1480.0	1580.0	2040.0	2253.0
31	1480.0	1500.0	1560.0	2100.0	2293.0
32	1500.0	1540.0	1460.0	2000.0	2220.0
33	1500.0	1520.0	1400.0	1841.0	2240.0
34	1480.0	1400.0	1746.0	2218.0	2056.0
35	1460.0	1200.0	1640.0	1960.0	2220.0
36	1440.0	1463.0	1380.0	1900.0	2405.0

STACK # 1--SHAWVILLE STACKS 1&2 COAL-NOX
STACK # 2--SHAWVILLE STACK 3 AND 4 COAL-NOX NORMAL LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	176.00	0.00	182.88	3.81	21.82	391.00	248.77
2	NOM	275.00	0.00	99.06	3.73	18.84	386.00	205.87

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.26 1.09 0.98 0.87 1.10 0.92 0.87 1.08 0.98 0.80 1.05 1.00

YEAR BASED ON 365. DAYS

PENN. ELECTRIC CO. SHANVILLE

NUM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.9650E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.0399E-04 (150)	1.0467E-04 (173)	8.5071E-05 (173)	7.2546E-05 (165)	7.0849E-05 (283)
2	1.1774E-04 (140)	1.0457E-04 (140)	8.3477E-05 (259)	7.1844E-05 (265)	6.9942E-05 (7)
3	1.3505E-04 (237)	1.1204E-04 (237)	9.3487E-05 (306)	1.1338E-04 (306)	9.4400E-05 (306)
4	1.2760E-04 (151)	1.0702E-04 (151)	1.0111E-04 (56)	1.0258E-04 (56)	8.6214E-05 (23)
5	1.2722E-04 (131)	9.9869E-05 (131)	9.2913E-05 (11)	8.8704E-05 (330)	7.8138E-05 (242)
6	1.1074E-04 (221)	1.0060E-04 (221)	1.0852E-04 (19)	1.0826E-04 (19)	8.1254E-05 (19)
7	1.2023E-04 (221)	1.0391E-04 (221)	1.1721E-04 (14)	1.2154E-04 (14)	9.8784E-05 (4)
8	1.0957E-04 (256)	1.0176E-04 (90)	1.2567E-04 (44)	1.2070E-04 (44)	9.2850E-05 (45)
9	1.1938E-04 (230)	1.0489E-04 (256)	1.1429E-04 (30)	1.2545E-04 (30)	1.0053E-04 (30)
10	1.5274E-04 (230)	1.1713E-04 (230)	1.5377E-04 (94)	1.2842E-04 (94)	1.0683E-04 (318)
11	1.4303E-04 (230)	1.0986E-04 (230)	1.1227E-04 (79)	1.1668E-04 (79)	8.7467E-05 (79)
12	1.3409E-04 (239)	9.9947E-05 (67)	1.1111E-04 (67)	9.9704E-05 (67)	7.5904E-05 (96)
13	1.1806E-04 (122)	9.7272E-05 (136)	8.8431E-05 (2)	8.4719E-05 (2)	7.8319E-05 (303)
14	1.3625E-04 (122)	1.0210E-04 (136)	8.6189E-05 (122)	7.8271E-05 (302)	7.4873E-05 (302)
15	1.2662E-04 (122)	9.6981E-05 (220)	9.6932E-05 (86)	9.4032E-05 (86)	7.7224E-05 (86)
16	1.0939E-04 (219)	9.6202E-05 (219)	7.4175E-05 (219)	7.5307E-05 (34)	6.8768E-05 (34)
17	1.1824E-04 (219)	1.0197E-04 (219)	7.5384E-05 (219)	6.9572E-05 (33)	6.8324E-05 (31)
18	1.1233E-04 (127)	1.0723E-04 (127)	8.0152E-05 (127)	8.7063E-05 (20)	7.3665E-05 (20)
19	1.2275E-04 (127)	1.0489E-04 (127)	7.9829E-05 (127)	8.3882E-05 (20)	7.7777E-05 (218)
20	1.2373E-04 (127)	9.8375E-05 (127)	7.8807E-05 (218)	7.4904E-05 (218)	6.6362E-05 (218)
21	1.0676E-04 (127)	9.0731E-05 (180)	7.6604E-05 (218)	6.5693E-05 (180)	6.0778E-05 (180)
22	1.0786E-04 (180)	9.3428E-05 (180)	8.1702E-05 (218)	8.2032E-05 (218)	6.9478E-05 (218)
23	9.4891E-05 (180)	8.6541E-05 (291)	8.3217E-05 (291)	8.9157E-05 (291)	8.5749E-05 (291)
24	9.8164E-05 (176)	1.0600E-04 (176)	9.3416E-05 (291)	8.8197E-05 (33)	8.4701E-05 (33)
25	8.9654E-05 (176)	9.7694E-05 (176)	1.1325E-04 (73)	1.3025E-04 (73)	1.0017E-04 (73)
26	9.4194E-05 (145)	9.9302E-05 (145)	7.8219E-05 (145)	8.4960E-05 (28)	9.1893E-05 (28)
27	8.5133E-05 (145)	9.6136E-05 (178)	8.2264E-05 (178)	8.4796E-05 (121)	9.0100E-05 (121)
28	9.3510E-05 (120)	8.7610E-05 (178)	7.5864E-05 (244)	9.6211E-05 (121)	8.9324E-05 (121)
29	1.2080E-04 (120)	1.0037E-04 (120)	9.7584E-05 (243)	1.0880E-04 (243)	9.2810E-05 (243)
30	1.2267E-04 (120)	1.0424E-04 (120)	8.6832E-05 (120)	9.1717E-05 (8)	7.7471E-05 (162)
31	1.4078E-04 (137)	1.0962E-04 (137)	1.0575E-04 (123)	1.1502E-04 (123)	8.9187E-05 (123)
32	1.2066E-04 (137)	9.2699E-05 (137)	7.4850E-05 (272)	7.9203E-05 (6)	7.2078E-05 (6)
33	1.0064E-04 (258)	8.9342E-05 (258)	7.1968E-05 (258)	6.8860E-05 (71)	6.7570E-05 (71)
34	1.0514E-04 (258)	8.6237E-05 (258)	6.9756E-05 (211)	7.1203E-05 (53)	7.3375E-05 (53)
35	9.5545E-05 (168)	8.5612E-05 (187)	7.5695E-05 (11)	7.2815E-05 (11)	6.2662E-05 (146)
36	1.9650E-04 (150)	1.5468E-04 (195)	1.0747E-04 (195)	8.1769E-05 (195)	7.0710E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

MAXIMUM MEAN CONC= 5.78208E-05 DIRECTION= 10 DISTANCE= 0.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.1 KM	6.7 KM	13.3 KM
1	5.57329E-05	5.63358E-05	5.48570E-05	5.35948E-05	5.29279E-05
2	5.63918E-05	5.69713E-05	5.52625E-05	5.38706E-05	5.31964E-05
3	5.66808E-05	5.72370E-05	5.61481E-05	5.52072E-05	5.41732E-05
4	5.63221E-05	5.68168E-05	5.60285E-05	5.52492E-05	5.41299E-05
5	5.56417E-05	5.60457E-05	5.56792E-05	5.50983E-05	5.39973E-05
6	5.54964E-05	5.58109E-05	5.57940E-05	5.52842E-05	5.40781E-05
7	5.59744E-05	5.63267E-05	5.66167E-05	5.61398E-05	5.45296E-05
8	5.67653E-05	5.71932E-05	5.71993E-05	5.64140E-05	5.47178E-05
9	5.74877E-05	5.76558E-05	5.70950E-05	5.61032E-05	5.45250E-05
10	5.78203E-05	5.74545E-05	5.64587E-05	5.54316E-05	5.41547E-05
11	5.73760E-05	5.65388E-05	5.53262E-05	5.44365E-05	5.34563E-05
12	5.62481E-05	5.55588E-05	5.47140E-05	5.40713E-05	5.32917E-05
13	5.50579E-05	5.47186E-05	5.40161E-05	5.35659E-05	5.30567E-05
14	5.41714E-05	5.40897E-05	5.35464E-05	5.31619E-05	5.27551E-05
15	5.35843E-05	5.36326E-05	5.32312E-05	5.30093E-05	5.26647E-05
16	5.31484E-05	5.31630E-05	5.28019E-05	5.25622E-05	5.23603E-05
17	5.28792E-05	5.29112E-05	5.27004E-05	5.26204E-05	5.24179E-05
18	5.26801E-05	5.27270E-05	5.25542E-05	5.24545E-05	5.23097E-05
19	5.25791E-05	5.25602E-05	5.25164E-05	5.24697E-05	5.23263E-05
20	5.24766E-05	5.25001E-05	5.23604E-05	5.22633E-05	5.21929E-05
21	5.24466E-05	5.24782E-05	5.23415E-05	5.22613E-05	5.21664E-05
22	5.24448E-05	5.25190E-05	5.24234E-05	5.23704E-05	5.22846E-05
23	5.25521E-05	5.27406E-05	5.26088E-05	5.25879E-05	5.25066E-05
24	5.27526E-05	5.31130E-05	5.30126E-05	5.31146E-05	5.29595E-05
25	5.29203E-05	5.33990E-05	5.35248E-05	5.38108E-05	5.35129E-05
26	5.29833E-05	5.33960E-05	5.32793E-05	5.32945E-05	5.31258E-05
27	5.30212E-05	5.32891E-05	5.31200E-05	5.32271E-05	5.30707E-05
28	5.33059E-05	5.35434E-05	5.31909E-05	5.33866E-05	5.30029E-05
29	5.39914E-05	5.41872E-05	5.40870E-05	5.41521E-05	5.35627E-05
30	5.46437E-05	5.46433E-05	5.41666E-05	5.38512E-05	5.32055E-05
31	5.46617E-05	5.45315E-05	5.39389E-05	5.34301E-05	5.29167E-05
32	5.41711E-05	5.40742E-05	5.34440E-05	5.30153E-05	5.26947E-05
33	5.36262E-05	5.36384E-05	5.31801E-05	5.28743E-05	5.25353E-05
34	5.33653E-05	5.34380E-05	5.30518E-05	5.28030E-05	5.26188E-05
35	5.33773E-05	5.34307E-05	5.30078E-05	5.26735E-05	5.24800E-05
36	5.69066E-05	5.73807E-05	5.51575E-05	5.35534E-05	5.28357E-05

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 5.4162E-04 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	3.1490E-04 (146)	2.4416E-04 (146)	1.9137E-04 (228)	1.5989E-04 (165)	1.6089E-04 (283)
2	3.3326E-04 (238)	2.7254E-04 (140)	2.2357E-04 (259)	1.7684E-04 (17)	1.7549E-04 (7)
3	3.2617E-04 (237)	2.7033E-04 (237)	2.2870E-04 (24)	2.5695E-04 (306)	1.8935E-04 (306)
4	3.3070E-04 (131)	2.9906E-04 (23)	2.0706E-04 (225)	2.2575E-04 (15)	2.2787E-04 (23)
5	2.7663E-04 (131)	2.4386E-04 (301)	2.3485E-04 (18)	2.3936E-04 (242)	2.1066E-04 (242)
6	3.1360E-04 (236)	2.3535E-04 (221)	2.3514E-04 (18)	2.3442E-04 (1)	1.7092E-04 (37)
7	2.8757E-04 (236)	2.4120E-04 (14)	2.2631E-04 (16)	2.2854E-04 (14)	2.1083E-04 (308)
8	3.0472E-04 (245)	2.5268E-04 (30)	2.3123E-04 (9)	2.6380E-04 (4)	1.9665E-04 (45)
9	3.1751E-04 (224)	2.5194E-04 (30)	2.3621E-04 (9)	2.2860E-04 (42)	1.9709E-04 (30)
10	3.4218E-04 (230)	2.4015E-04 (148)	2.2897E-04 (2)	2.5505E-04 (326)	2.0287E-04 (326)
11	3.4111E-04 (239)	2.5823E-04 (326)	2.0077E-04 (337)	2.0036E-04 (79)	1.7478E-04 (22)
12	3.3262E-04 (239)	2.2193E-04 (229)	1.8463E-04 (67)	2.0176E-04 (252)	1.6665E-04 (318)
13	2.8888E-04 (136)	2.3556E-04 (136)	2.0414E-04 (2)	2.2490E-04 (2)	1.4881E-04 (13)
14	3.1525E-04 (136)	2.4994E-04 (220)	1.7539E-04 (340)	1.9723E-04 (340)	1.4700E-04 (13)
15	3.0626E-04 (122)	2.4123E-04 (219)	2.0890E-04 (34)	2.3151E-04 (19)	1.8056E-04 (19)
16	2.8507E-04 (219)	2.2326E-04 (220)	1.8894E-04 (126)	2.1480E-04 (126)	1.4032E-04 (126)
17	3.1170E-04 (219)	2.4113E-04 (219)	1.6945E-04 (185)	1.7237E-04 (20)	1.3216E-04 (19)
18	3.0673E-04 (219)	2.4626E-04 (127)	1.6162E-04 (214)	2.3323E-04 (20)	1.6886E-04 (20)
19	2.6714E-04 (127)	2.1069E-04 (127)	1.6051E-04 (20)	1.7169E-04 (20)	1.7052E-04 (218)
20	3.2444E-04 (127)	2.3448E-04 (127)	2.0121E-04 (20)	1.6870E-04 (218)	1.3346E-04 (218)
21	2.7875E-04 (127)	2.0650E-04 (218)	1.6422E-04 (218)	1.4799E-04 (72)	1.2216E-04 (87)
22	2.8169E-04 (180)	2.1796E-04 (180)	1.7745E-04 (218)	1.6753E-04 (218)	1.4977E-04 (291)
23	2.3530E-04 (176)	1.9765E-04 (291)	1.7710E-04 (291)	1.6900E-04 (291)	1.8968E-04 (291)
24	2.6307E-04 (176)	2.4829E-04 (235)	2.1203E-04 (32)	1.9205E-04 (242)	1.9157E-04 (28)
25	2.5555E-04 (235)	2.8238E-04 (235)	1.8901E-04 (235)	2.1099E-04 (32)	1.9479E-04 (43)
26	3.1174E-04 (145)	2.2973E-04 (145)	1.9405E-04 (69)	2.1776E-04 (48)	2.3724E-04 (28)
27	2.8620E-04 (145)	2.4431E-04 (181)	1.6435E-04 (35)	2.1858E-04 (227)	1.9202E-04 (227)
28	2.4244E-04 (161)	1.8651E-04 (178)	1.7631E-04 (334)	2.0601E-04 (121)	1.8038E-04 (121)
29	2.6652E-04 (21)	2.2297E-04 (244)	2.1044E-04 (76)	2.4974E-04 (243)	2.0253E-04 (243)
30	3.4716E-04 (21)	2.6658E-04 (21)	1.9369E-04 (333)	2.4358E-04 (8)	1.7143E-04 (87)
31	3.4801E-04 (137)	2.4730E-04 (333)	2.1204E-04 (123)	2.8660E-04 (10)	2.0551E-04 (10)
32	2.9314E-04 (137)	2.4164E-04 (334)	1.6983E-04 (6)	1.7276E-04 (6)	1.5872E-04 (6)
33	3.0165E-04 (250)	2.3451E-04 (250)	1.5880E-04 (149)	1.5180E-04 (149)	1.3843E-04 (71)
34	3.1152E-04 (135)	2.3988E-04 (150)	1.6397E-04 (11)	1.9667E-04 (53)	1.8524E-04 (53)
35	2.8705E-04 (135)	2.0205E-04 (59)	1.8233E-04 (11)	1.6741E-04 (11)	1.2358E-04 (259)
36	5.4162E-04 (150)	3.8506E-04 (150)	2.2936E-04 (142)	1.6305E-04 (232)	1.1221E-04 (232)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	1.9650E-04	36	0.83
195	1.5469E-04	36	1.66
173	1.5387E-04	36	1.66
94	1.5177E-04	10	3.32
230	1.5274E-04	10	0.83
197	1.4155E-04	36	1.66
191	1.4142E-04	36	1.66
137	1.4078E-04	31	0.83
239	1.3822E-04	11	0.83
189	1.3633E-04	36	1.66
122	1.3625E-04	14	0.83
237	1.3505E-04	3	0.83
247	1.3475E-04	11	0.83
73	1.3025E-04	25	6.65
111	1.3002E-04	12	0.83
103	1.2920E-04	12	0.83
166	1.2868E-04	31	0.83
136	1.2784E-04	14	0.83
140	1.2766E-04	10	0.83
151	1.2760E-04	4	0.83

PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY PROJECT 7101 -

COAL MAXIMUM CONDITION

STACK # 1--SHAWVILLE STACK 1 (MAX. COND.) COAL NOX
STACK # 2--SHAWVILLE STACK 3&4 COAL NOX MAXIMUM LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOX	216.00	0.00	182.88	3.81	29.38	403.00	334.96
2	NOX	329.00	0.00	99.06	3.73	22.52	396.00	246.08

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 3 JDAY= 73
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 7.2 7.2 9.8 8.9 8.9 8.5 8.5 8.1 8.9 8.9 9.8 10.3 8.1 7.6 6.3 5.8 5.8 5.8 4.5 4.5 4.0 3.1 3.1 2.2
TEMP= 271. 271. 270. 270. 270. 269. 268. 268. 268. 269. 269. 269. 270. 270. 270. 270. 270. 270. 269. 269. 270. 270. 270. 270. 269.
AFV= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
AFVR= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
HLH1= 801. 801. 801. 801. 801. 801. 770. 739. 708. 677. 646. 615.
584. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553.

JYR=75 IHO= 4 JDAY= 94
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 14.8 13.4 16.1 15.6 12.5 12.5 11.6 12.1 14.8 16.1 15.6 17.4 16.1 15.6 15.6 15.2 15.2 14.8 12.5 10.3 9.4 9.8 10.7 9.8
TEMP= 268. 267. 267. 267. 266. 266. 266. 266. 267. 267. 267. 268. 269. 269. 268. 268. 268. 267. 267. 266. 266. 266. 266. 266.
AFV= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
AFVR= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
HLH1= 600. 600. 600. 600. 600. 600. 600. 720. 840. 960. 1060. 1170.
1280. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.

JYR=75 IHO= 4 JDAY=103
ISTAB= 4 4 4 4 4 4 4 3 2 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.4 5.4 5.8 6.3 5.8 5.4 4.5 4.0 5.4 6.7 6.3 6.3 7.2 7.2 7.2 6.7 5.8 5.4 5.4 5.8 5.8 5.4 4.5 3.6
TEMP= 270. 269. 269. 269. 267. 267. 267. 270. 273. 274. 275. 275. 275. 275. 276. 277. 278. 279. 276. 274. 273. 272. 271. 270.
AFV= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
AFVR= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
HLH1= 822. 822. 822. 822. 822. 822. 1039. 1257. 1474. 1692. 1909. 2127.
2344. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561.

JYR=75 IHO= 4 JDAY=111
ISTAB= 3 3 3 3 3 4 3 3 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.8 5.8 8.5 6.7 6.3 4.5 4.9 7.2 8.1 8.1 8.1 7.2 7.6 7.2 7.2 8.1 7.2 6.7 6.3 6.3 5.4 6.3 7.7 3.1
TEMP= 275. 275. 275. 274. 274. 272. 273. 274. 275. 275. 275. 277. 279. 280. 281. 281. 282. 281. 280. 277. 276. 275. 274. 274.
AFV= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
AFVR= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
HLH1= 2000. 2000. 2000. 2000. 2000. 2000. 2002. 2005. 2008. 2010. 2013. 2016.
2018. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021.

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JYR=75 IHO= 5 JDAY=122
ISTAB=  3    3    4    4    4    4    3    2    2    1    1    1    1    1    1    1    1    1    3    3    4    4    4    4
AWS=  1.8  1.3  0.4  1.3  3.1  4.5  4.9  6.3  6.7  6.7  7.2  7.2  7.2  6.3  6.3  6.7  8.1  7.6  1.8  6.7  3.1  2.7  2.2  2.2
TEMP= 280. 280. 280. 280. 280. 281. 282. 284. 285. 285. 287. 288. 289. 290. 291. 291. 291. 291. 289. 287. 283. 283. 281. 281.
AFV=  252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
AFVR= 252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
HLHI= 598. 598. 598. 598. 598. 598. 598.  723.  848.  973. 1098. 1223. 1347.
      1472. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597.


JYR=75 IHO= 5 JDAY=136
ISTAB=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  1.8  2.2  3.1  4.0  2.7  2.2  3.6  4.0  4.0  4.9  4.5  5.4  4.9  4.9  4.9  4.9  4.5  4.9  5.4  5.8  4.9  4.5  4.5  4.9
TEMP= 286. 286. 285. 285. 285. 285. 285. 286. 288. 289. 291. 292. 294. 294. 295. 295. 295. 295. 292. 290. 288. 286. 285. 284.
AFV=   32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
AFVR=  32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
HLHI= 1188. 1188. 1188. 1188. 1188. 1188. 1166. 1145. 1123. 1102. 1080. 1059.
      1037. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016.


JYR=75 IHO= 5 JDAY=137
ISTAB=  4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    2    3    3    3    4    4    4
AWS=  3.6  4.0  2.7  3.1  4.5  5.4  6.7  5.8  5.4  4.5  5.4  5.8  5.4  5.8  6.3  5.4  5.4  5.8  4.5  6.7  7.2  4.0  3.1  3.6
TEMP= 283. 282. 281. 280. 279. 279. 281. 285. 288. 291. 294. 295. 297. 296. 296. 295. 295. 294. 292. 291. 289. 288. 287. 287.
AFV=  245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   8. 351. 335. 329.
AFVR= 245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   8. 351. 335. 329.
HLHI=  312.  312.  312.  312.  312.  312.  439.  566.  693.  820.  947. 1074.
      1200. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IHO= 5 JDAY=148
ISTAB=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  3.1  1.3  2.2  2.7  2.7  2.7  3.1  3.1  1.8  3.1  4.9  5.4  4.5  4.5  4.0  4.0  4.0  3.6  4.0  5.8  6.7  4.5  2.2  2.2
TEMP= 284. 283. 282. 281. 280. 280. 282. 286. 289. 291. 292. 293. 295. 296. 297. 298. 298. 298. 296. 293. 290. 289. 287. 285.
AFV=  137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
AFVR= 137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
HLHI=  473.  473.  473.  473.  473.  473.  633.  792.  952. 1111. 1271. 1431.
      1590. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750.


JYR=75 IHO= 5 JDAY=150
ISTAB=  4    3    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    3    3    4    4    4
AWS=  5.8  7.6  6.7  6.7  7.2  6.3  7.6  6.3  3.1  4.0  4.9  4.0  4.0  4.5  4.9  4.5  5.4  3.1  4.0  3.1  3.1  4.9  4.5  3.6
TEMP= 283. 283. 283. 283. 283. 283. 283. 283. 293. 294. 294. 295. 297. 300. 299. 299. 299. 297. 296. 294. 294. 294. 293. 292.
AFV=   30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
AFVR=  30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 337. 348. 353.   9.  14.  33.  29.
HLHI=  982.  982.  982.  982.  982.  982. 1018. 1055. 1092. 1128. 1165. 1201.
      1238. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275.


JYR=75 IHO= 5 JDAY=151
ISTAB=  4    4    4    4    4    4    4    1    2    2    1    1    1    1    1    1    2    3    4    4    3    4    4    4
AWS=  3.6  2.2  3.1  4.0  4.0  5.4  5.8  5.8  7.2  6.7  8.1  8.1  8.5  8.9  9.4  5.8  4.9  3.6  4.0  3.6  5.4  4.5  4.5  5.4
TEMP= 291. 291. 291. 290. 290. 290. 290. 290. 293. 295. 295. 297. 297. 298. 299. 299. 297. 297. 297. 296. 295. 294. 292. 292. 291.
AFV=   21.  22.  29.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
AFVR=  21.  22.  29.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
HLHI=  863.  863.  863.  863.  863.  863.  911.  960. 1008. 1057. 1105. 1153.
      1202. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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JYR=75 IHO= 6 JDAY=166
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    2    3    4    4    3    4
AWS=  1.8  1.8  1.8  0.9  0.9  2.7  3.1  1.8  1.3  3.6  4.5  6.7  8.5  8.5  9.4  8.9  9.4  7.2  7.2  7.2  7.6  7.2  8.5  6.3
TEMP= 288. 287. 287. 287. 286. 286. 288. 290. 294. 297. 300. 301. 301. 302. 301. 301. 301. 300. 299. 298. 296. 296. 294. 290.
AFV=  352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
AFVR= 352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
HLH1=  356.  356.  356.  356.  356.  356.  515.  673.  832.  990. 1149. 1308.
      1466. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625.


JYR=75 IHO= 6 JDAY=173
ISTAR=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  0.4  2.2  2.2  2.2  1.3  0.0  0.0  0.9  1.3  2.2  2.7  2.2  3.1  2.7  2.2  1.3  3.1  3.6  2.2  3.1  3.6  3.1  3.1  2.7
TEMP= 288. 287. 287. 286. 286. 286. 288. 292. 295. 297. 299. 301. 302. 302. 302. 304. 303. 300. 299. 296. 295. 294. 294. 292.
AFV=  211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
AFVR= 211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
HLH1=  340.  340.  340.  340.  340.  340.  458.  577.  695.  814.  932. 1051.
      1169. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288.


JYR=75 IHO= 7 JDAY=189
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  1.3  1.3  1.3  1.8  1.8  1.8  0.4  2.7  1.8  1.3  1.3  2.7  2.7  2.7  3.6  2.7  3.6  4.5  4.5  3.1  1.3  2.7  2.2  3.1
TEMP= 289. 289. 288. 288. 288. 288. 288. 290. 291. 294. 298. 300. 302. 303. 301. 300. 301. 299. 297. 296. 295. 294. 294. 293.
AFV=  342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
AFVR= 342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
HLH1=  609.  609.  609.  609.  609.  609.  750.  890. 1031. 1171. 1312. 1453.
      1593. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734.


JYR=75 IHO= 7 JDAY=191
ISTAR=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    2    3    3    4    4    4
AWS=  1.3  1.8  0.9  1.3  0.9  1.3  2.2  0.4  0.4  1.3  2.2  2.2  2.7  4.0  2.7  4.0  3.1  4.5  5.4  1.0  1.0  1.0  1.3  2.7
TEMP= 289. 287. 286. 285. 285. 284. 287. 290. 293. 296. 297. 297. 298. 299. 301. 301. 283. 283. 283. 283. 283. 283. 287. 287.
AFV=   19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
AFVR=  19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
HLH1=  542.  542.  542.  542.  542.  542.  716.  890. 1065. 1239. 1413. 1588.
      1762. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936.


JYR=75 IHO= 7 JDAY=195
ISTAR=  3    3    4    4    4    4    4    3    1    1    1    1    1    1    1    3    1    1    3    4    4    4    4    4    4
AWS=  2.2  2.2  2.7  2.7  1.8  1.3  1.3  1.3  1.3  2.7  3.6  3.6  3.6  3.1  3.6  4.0  3.6  3.6  3.1  2.7  1.8  0.4  0.9  2.2
TEMP= 291. 290. 290. 290. 290. 290. 290. 291. 292. 293. 296. 297. 299. 299. 295. 297. 297. 294. 292. 292. 292. 291. 291. 291.
AFV=  323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
AFVR= 323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
HLH1=  660.  660.  660.  660.  660.  660.  743.  827.  910.  994. 1077. 1160.
      1244. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IHO= 7 JDAY=197
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.1  4.0  2.2  0.4  0.0  0.0  0.4  0.4  1.3  2.7  2.7  3.6  2.7  2.7  2.2  2.2  3.1  3.1  3.1  3.1  0.9  2.2  1.8  0.9
TEMP= 291. 291. 291. 291. 291. 291. 291. 292. 294. 296. 299. 299. 298. 301. 301. 301. 300. 299. 297. 295. 295. 294. 293. 292.
AFV=  259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
AFVR= 259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
HLH1=  640.  640.  640.  640.  640.  640.  832. 1024. 1216. 1408. 1600. 1793.
      1985. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177.
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JYR=75 IHO= 8 JDAY=230
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  4.0  3.6  4.9  4.9  4.5  5.4  4.5  3.6  4.0  5.4  5.8  5.4  5.8  6.3  7.2  6.3  6.3  5.8  6.3  6.7  7.6  6.7  3.1  3.6
TEMP= 290. 290. 289. 289. 289. 290. 291. 292. 293. 294. 295. 296. 296. 297. 297. 297. 298. 297. 295. 292. 291. 290. 289. 288.
AFV=   40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
AFVR=  40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
HLHI=  967.  967.  967.  967.  967.  967. 1073. 1179. 1284. 1390. 1496. 1601.
      1707. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813.


JYR=75 IHO= 8 JDAY=237
ISTAR=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    2    2    3    4    4    4    4    4
AWS=  7.6  5.8  4.5  4.0  4.9  4.9  4.5  4.0  4.5  4.0  4.0  5.8  5.4  6.7  8.1  8.5  8.5  7.6  7.2  6.3  4.9  4.5  4.9  4.0
TEMP= 295. 294. 294. 293. 293. 292. 293. 294. 296. 297. 299. 300. 301. 302. 301. 302. 301. 301. 299. 298. 296. 295. 294. 293.
AFV=   47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
AFVR=  47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
HLHI=  501.  501.  501.  501.  501.  501.  538.  574.  611.  648.  684.  721.
       758.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.


JYR=75 IHO= 8 JDAY=239
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  6.3  5.4  4.5  3.6  2.7  3.6  4.0  3.1  2.2  3.6  4.9  6.7  8.1  7.6  6.3  7.2  6.3  5.4  6.7  7.2  6.3  4.9  4.9  3.6
TEMP= 290. 290. 289. 288. 288. 287. 287. 288. 290. 294. 296. 297. 298. 298. 299. 299. 299. 299. 296. 293. 291. 289. 287. 286.
AFV=  114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
AFVR= 114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
HLHI=  439.  439.  439.  439.  439.  439.  544.  649.  754.  859.  965. 1070.
      1175. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280.


JYR=75 IHO= 9 JDAY=247
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    2    4    4    4    4    4    4
AWS=  0.4  0.4  1.3  2.7  3.1  4.5  4.0  4.0  5.4  6.7  6.7  6.7  6.7  7.2  8.1  7.2  7.2  8.5  6.3  5.4  4.0  4.9  6.3  4.5
TEMP= 286. 286. 286. 286. 286. 287. 287. 288. 290. 291. 293. 294. 295. 296. 295. 295. 295. 294. 291. 290. 288. 288. 286. 285.
AFV=   47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
AFVR=  47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
HLHI=   35.   35.   35.   35.   35.   35.  172.  308.  445.  581.  718.  855.
       991. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128.

YEAR BASED ON  20. DAYS
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PENN. ELECTRIC CO. SHANVILLE

NOM--802

MAXIMUM MEAN CONC= 8.3185E-05 DIRECTION= 36 DISTANCE= 1.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.8 KM	1.7 KM	3.1 KM	6.7 KM	13.3 KM
1		6.48066E-05	6.71725E-05	6.12100E-05	5.69979E-05	5.48409E-05
2		6.18656E-05	6.19551E-05	5.75021E-05	5.49265E-05	5.38857E-05
3		6.07687E-05	5.97797E-05	5.67069E-05	5.48106E-05	5.36615E-05
4		5.98526E-05	5.84742E-05	5.59491E-05	5.41869E-05	5.30979E-05
5		5.45678E-05	5.55940E-05	5.42397E-05	5.31979E-05	5.27952E-05
6		5.36500E-05	5.32029E-05	5.27367E-05	5.23509E-05	5.23279E-05
7		5.31557E-05	5.27143E-05	5.25006E-05	5.22801E-05	5.21403E-05
8		5.56045E-05	5.39889E-05	5.31485E-05	5.29660E-05	5.25764E-05
9		6.16514E-05	5.80069E-05	5.51490E-05	5.35745E-05	5.27402E-05
10		7.10879E-05	6.62477E-05	6.36068E-05	5.97194E-05	5.58944E-05
11		7.78604E-05	6.84362E-05	5.98017E-05	5.60419E-05	5.42177E-05
12		7.62975E-05	6.64232E-05	5.86425E-05	5.53951E-05	5.36896E-05
13		7.00456E-05	6.27942E-05	5.65798E-05	5.37137E-05	5.27343E-05
14		6.41231E-05	5.93426E-05	5.58792E-05	5.46348E-05	5.34994E-05
15		5.98275E-05	5.67653E-05	5.41796E-05	5.31410E-05	5.25904E-05
16		5.60791E-05	5.43481E-05	5.28663E-05	5.23262E-05	5.21534E-05
17		5.34798E-05	5.27800E-05	5.22603E-05	5.20941E-05	5.20417E-05
18		5.24474E-05	5.23488E-05	5.23438E-05	5.23944E-05	5.22379E-05
19		5.22646E-05	5.24763E-05	5.23285E-05	5.21341E-05	5.20638E-05
20		5.21030E-05	5.21800E-05	5.21037E-05	5.20334E-05	5.20118E-05
21		5.20099E-05	5.20108E-05	5.20034E-05	5.20005E-05	5.20001E-05
22		5.20004E-05	5.20002E-05	5.20016E-05	5.20012E-05	5.20002E-05
23		5.20035E-05	5.20022E-05	5.20515E-05	5.20791E-05	5.20359E-05
24		5.20400E-05	5.20506E-05	5.26065E-05	5.33922E-05	5.33093E-05
25		5.22482E-05	5.25461E-05	5.49172E-05	5.62887E-05	5.49130E-05
26		5.26232E-05	5.28726E-05	5.35048E-05	5.35994E-05	5.31540E-05
27		5.28043E-05	5.27139E-05	5.25928E-05	5.24886E-05	5.24711E-05
28		5.31667E-05	5.27545E-05	5.23094E-05	5.21359E-05	5.20662E-05
29		5.48299E-05	5.35849E-05	5.25695E-05	5.23057E-05	5.25650E-05
30		5.85296E-05	5.57778E-05	5.34016E-05	5.24975E-05	5.22298E-05
31		6.16317E-05	5.80407E-05	5.44621E-05	5.29175E-05	5.24499E-05
32		6.05907E-05	5.77056E-05	5.44795E-05	5.30575E-05	5.27904E-05
33		5.75445E-05	5.62390E-05	5.46258E-05	5.38916E-05	5.30954E-05
34		5.63596E-05	5.60967E-05	5.47226E-05	5.29157E-05	5.24199E-05
35		5.76149E-05	5.76022E-05	5.50892E-05	5.36421E-05	5.29318E-05
36		7.95648E-05	8.31851E-05	6.89326E-05	5.97563E-05	5.60858E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--802

YEARLY MAXIMUM 24-HOUR CONC= 1.8785E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.0022E-04 (150)	1.0872E-04 (197)	9.1081E-05 (173)	7.6256E-05 (173)	6.6908E-05 (173)
2	1.1441E-04 (237)	9.2250E-05 (237)	7.3412E-05 (197)	6.4764E-05 (197)	6.1116E-05 (197)
3	1.3354E-04 (237)	1.1196E-04 (237)	8.5571E-05 (237)	7.4777E-05 (237)	6.6950E-05 (237)
4	1.2681E-04 (151)	1.0590E-04 (151)	8.4038E-05 (237)	7.1096E-05 (237)	6.1914E-05 (237)
5	1.0643E-04 (151)	8.8305E-05 (151)	6.7641E-05 (151)	5.8501E-05 (166)	5.7459E-05 (239)
6	7.1705E-05 (151)	6.2624E-05 (151)	5.6217E-05 (189)	5.4950E-05 (189)	5.4116E-05 (148)
7	6.0377E-05 (148)	5.6765E-05 (148)	5.8143E-05 (189)	5.6596E-05 (189)	5.4464E-05 (189)
8	7.9905E-05 (230)	6.9505E-05 (148)	5.8353E-05 (111)	6.4741E-05 (111)	6.0554E-05 (111)
9	1.1943E-04 (230)	9.1802E-05 (230)	6.7331E-05 (230)	6.2253E-05 (94)	5.7101E-05 (94)
10	1.5259E-04 (230)	1.1745E-04 (230)	1.7341E-04 (94)	1.5169E-04 (94)	9.9836E-05 (94)
11	1.4941E-04 (111)	1.1066E-04 (230)	8.5112E-05 (247)	7.7783E-05 (247)	6.8654E-05 (247)
12	1.5112E-04 (111)	1.0964E-04 (111)	8.2289E-05 (111)	7.2249E-05 (111)	6.2905E-05 (111)
13	1.3163E-04 (103)	1.0088E-04 (103)	7.2855E-05 (103)	6.0901E-05 (136)	5.6373E-05 (136)
14	1.3636E-04 (122)	1.0163E-04 (136)	8.2810E-05 (122)	7.6023E-05 (122)	6.5190E-05 (122)
15	1.2653E-04 (122)	9.5930E-05 (122)	7.1056E-05 (122)	5.9868E-05 (148)	5.6648E-05 (148)
16	9.2018E-05 (122)	7.6579E-05 (136)	6.1400E-05 (136)	5.6054E-05 (136)	5.4010E-05 (136)
17	6.9013E-05 (136)	6.2198E-05 (136)	5.5673E-05 (136)	5.3468E-05 (136)	5.2675E-05 (136)
18	5.8695E-05 (136)	5.8196E-05 (136)	5.8700E-05 (136)	5.9850E-05 (136)	5.6748E-05 (136)
19	5.7063E-05 (136)	6.1467E-05 (136)	5.8560E-05 (136)	5.4696E-05 (136)	5.3275E-05 (136)
20	5.4047E-05 (136)	5.5598E-05 (136)	5.4073E-05 (136)	5.2668E-05 (136)	5.2237E-05 (136)
21	5.2199E-05 (136)	5.2216E-05 (136)	5.2068E-05 (136)	5.2011E-05 (136)	5.2002E-05 (136)
22	5.2004E-05 (136)	5.2002E-05 (136)	5.2032E-05 (166)	5.2075E-05 (166)	5.2005E-05 (166)
23	5.2069E-05 (137)	5.2029E-05 (137)	5.2980E-05 (166)	5.3563E-05 (166)	5.2717E-05 (166)
24	5.2795E-05 (137)	5.2623E-05 (137)	5.7333E-05 (73)	6.6835E-05 (73)	6.9504E-05 (73)
25	5.6884E-05 (137)	5.7568E-05 (73)	1.0552E-04 (73)	1.3505E-04 (73)	1.0907E-04 (73)
26	6.3918E-05 (137)	6.6331E-05 (137)	7.2943E-05 (73)	7.9306E-05 (73)	7.2585E-05 (73)
27	6.5099E-05 (137)	6.3508E-05 (137)	5.7911E-05 (137)	5.8019E-05 (73)	5.6734E-05 (166)
28	6.4197E-05 (137)	5.9414E-05 (137)	5.5052E-05 (166)	5.3361E-05 (137)	5.2661E-05 (166)
29	8.1818E-05 (166)	6.9075E-05 (166)	5.8533E-05 (166)	5.4675E-05 (166)	6.1336E-05 (195)
30	1.1617E-04 (166)	8.7714E-05 (137)	6.5497E-05 (137)	5.6971E-05 (137)	5.4311E-05 (137)
31	1.4460E-04 (166)	1.0962E-04 (137)	7.6435E-05 (137)	6.1704E-05 (137)	5.6736E-05 (137)
32	1.3364E-04 (166)	9.9144E-05 (166)	7.0394E-05 (166)	5.8418E-05 (166)	5.8828E-05 (195)
33	9.1573E-05 (166)	7.3803E-05 (166)	6.5146E-05 (166)	6.1356E-05 (166)	5.7846E-05 (137)
34	8.1833E-05 (150)	8.0008E-05 (150)	6.7612E-05 (150)	5.8424E-05 (150)	5.4937E-05 (150)
35	8.8031E-05 (150)	7.8381E-05 (150)	6.3698E-05 (197)	6.0465E-05 (150)	5.9361E-05 (150)
36	1.8785E-04 (150)	1.6901E-04 (195)	1.2035E-04 (195)	8.7819E-05 (195)	7.0638E-05 (150)

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 5.1219E-04 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	2.5334E-04 (150)	2.5446E-04 (191)	1.6793E-04 (173)	1.2833E-04 (173)	1.1048E-04 (173)
2	3.2132E-04 (237)	2.0469E-04 (197)	1.4764E-04 (197)	9.0654E-05 (197)	1.0061E-04 (189)
3	3.1505E-04 (237)	2.5894E-04 (237)	1.9491E-04 (237)	1.6065E-04 (237)	1.3428E-04 (237)
4	3.3251E-04 (151)	2.4985E-04 (237)	1.7871E-04 (237)	1.4129E-04 (237)	1.0042E-04 (237)
5	2.5597E-04 (151)	1.9245E-04 (151)	1.2155E-04 (151)	1.0400E-04 (173)	9.5674E-05 (239)
6	1.3026E-04 (151)	1.0362E-04 (151)	8.5731E-05 (189)	7.5601E-05 (189)	8.4854E-05 (148)
7	1.0810E-04 (148)	8.3438E-05 (148)	1.0115E-04 (189)	8.8768E-05 (189)	7.1711E-05 (139)
8	2.0969E-04 (148)	1.5278E-04 (148)	1.0095E-04 (111)	1.5358E-04 (111)	1.2036E-04 (111)
9	2.9408E-04 (148)	2.1965E-04 (148)	1.4579E-04 (94)	1.3343E-04 (94)	9.2785E-05 (94)
10	3.4271E-04 (230)	2.3435E-04 (148)	1.9357E-04 (94)	1.8716E-04 (94)	1.2202E-04 (94)
11	3.4705E-04 (239)	2.2436E-04 (247)	1.4334E-04 (247)	1.4447E-04 (247)	1.2238E-04 (247)
12	3.3964E-04 (239)	2.1111E-04 (239)	1.3940E-04 (111)	1.2522E-04 (111)	9.2065E-05 (111)
13	3.0176E-04 (103)	2.2377E-04 (136)	1.4744E-04 (136)	9.2966E-05 (136)	7.1856E-05 (136)
14	3.1262E-04 (122)	2.1799E-04 (136)	1.4231E-04 (122)	1.5067E-04 (122)	1.0634E-04 (122)
15	3.0973E-04 (122)	2.0203E-04 (136)	1.1425E-04 (122)	1.1493E-04 (148)	8.9185E-05 (148)
16	2.3458E-04 (136)	1.7280E-04 (136)	1.0003E-04 (136)	7.3489E-05 (136)	6.2966E-05 (136)
17	1.4917E-04 (136)	1.1238E-04 (136)	7.4566E-05 (136)	6.1487E-05 (136)	5.6542E-05 (136)
18	9.8589E-05 (136)	9.7552E-05 (136)	1.0419E-04 (136)	1.1441E-04 (136)	8.9864E-05 (136)
19	9.1452E-05 (136)	1.2751E-04 (136)	1.0441E-04 (136)	7.3477E-05 (136)	6.2199E-05 (136)
20	6.8345E-05 (136)	8.0774E-05 (136)	6.8585E-05 (136)	5.7344E-05 (136)	5.3896E-05 (136)
21	5.3588E-05 (136)	5.3727E-05 (136)	5.2546E-05 (136)	5.2085E-05 (136)	5.2012E-05 (136)
22	5.2033E-05 (136)	5.2016E-05 (136)	5.2258E-05 (166)	5.2198E-05 (166)	5.2037E-05 (166)
23	5.2554E-05 (137)	5.2228E-05 (137)	5.9838E-05 (166)	6.4506E-05 (166)	5.7737E-05 (166)
24	5.8362E-05 (137)	5.6983E-05 (137)	8.5855E-05 (73)	1.2013E-04 (73)	1.6220E-04 (73)
25	9.1073E-05 (137)	9.4548E-05 (137)	1.8114E-04 (73)	2.0076E-04 (73)	1.8378E-04 (73)
26	1.4718E-04 (137)	1.6661E-04 (137)	1.3826E-04 (73)	1.4620E-04 (73)	1.1202E-04 (73)
27	1.5382E-04 (137)	1.4318E-04 (137)	9.9134E-05 (137)	1.0002E-04 (73)	8.9868E-05 (166)
28	1.2555E-04 (137)	1.0201E-04 (166)	7.4528E-05 (166)	6.2411E-05 (166)	5.7188E-05 (166)
29	1.5631E-04 (166)	1.3542E-04 (166)	8.9447E-05 (166)	6.9618E-05 (166)	1.0640E-04 (195)
30	2.6418E-04 (137)	1.7367E-04 (137)	9.7002E-05 (137)	7.0767E-05 (137)	6.1361E-05 (137)
31	3.4395E-04 (137)	2.2742E-04 (137)	1.3993E-04 (137)	8.4868E-05 (137)	6.7838E-05 (137)
32	2.8971E-04 (137)	1.9299E-04 (166)	1.1608E-04 (166)	7.4198E-05 (166)	1.0651E-04 (195)
33	2.0497E-04 (150)	1.8610E-04 (150)	1.2062E-04 (150)	1.1306E-04 (166)	9.3330E-05 (137)
34	2.5523E-04 (150)	2.2061E-04 (150)	1.5684E-04 (150)	9.6207E-05 (150)	7.2092E-05 (150)
35	2.3902E-04 (150)	1.8853E-04 (195)	1.2143E-04 (197)	1.0714E-04 (137)	1.0004E-04 (150)
36	5.1219E-04 (150)	4.0316E-04 (195)	2.5845E-04 (173)	1.5597E-04 (173)	1.0949E-04 (195)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	1.8785E-04	36	0.83
94	1.7341E-04	10	3.32
195	1.6901E-04	36	1.66
173	1.5757E-04	36	1.66
230	1.5259E-04	10	0.83
197	1.5212E-04	36	1.66
191	1.5192E-04	36	1.66
111	1.5112E-04	12	0.83
189	1.4949E-04	36	1.66
103	1.4877E-04	12	0.83
166	1.4460E-04	31	0.83
247	1.4453E-04	11	0.83
239	1.3914E-04	11	0.83
137	1.3838E-04	31	0.83
122	1.3636E-04	14	0.83
73	1.3505E-04	25	6.65
237	1.3354E-04	3	0.83
151	1.2681E-04	4	0.83
136	1.2430E-04	14	0.83
148	1.2247E-04	10	0.83

```
PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY     PROJECT 7101

SHAWVILLE PLANT 1975

&NAM1
KSTL=4  IUR=1  IPAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     52.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1080.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1350.0	1300.0	1400.0	1880.0	2160.0
2	1200.0	1200.0	1600.0	2174.0	2100.0
3	1160.0	1460.0	1590.0	1760.0	2000.0
4	1120.0	1400.0	1540.0	1600.0	1900.0
5	1200.0	1360.0	1520.0	1600.0	1800.0
6	1250.0	1340.0	1350.0	1567.0	1560.0
7	1220.0	1320.0	1260.0	1560.0	1500.0
8	1180.0	1300.0	1540.0	1500.0	1481.0
9	1100.0	1300.0	1340.0	1627.0	1549.0
10	1070.0	1320.0	1584.0	1639.0	1564.0
11	1050.0	1320.0	1580.0	1766.0	1668.0
12	1160.0	1060.0	1340.0	1836.0	1744.0
13	1320.0	1150.0	1300.0	1720.0	1700.0
14	1400.0	1420.0	1420.0	1743.0	1800.0
15	1420.0	1520.0	1605.0	1700.0	1900.0
16	1440.0	1590.0	1580.0	1900.0	2100.0
17	1440.0	1300.0	1580.0	1900.0	2100.0
18	1440.0	1260.0	1260.0	1780.0	1840.0
19	1420.0	1200.0	1320.0	1700.0	1620.0
20	1400.0	1100.0	1400.0	1625.0	1540.0
21	1200.0	1080.0	1480.0	1540.0	1520.0
22	1060.0	1300.0	1572.0	1440.0	1620.0
23	1050.0	1460.0	1540.0	1120.0	1537.0
24	1200.0	1500.0	1540.0	1551.0	1796.0
25	1200.0	1400.0	1540.0	1505.0	1773.0
26	1260.0	1440.0	1520.0	1660.0	2120.0
27	1380.0	1460.0	1560.0	1880.0	2320.0
28	1440.0	1400.0	1540.0	1760.0	2251.0
29	1460.0	1440.0	1560.0	2140.0	2224.0
30	1460.0	1480.0	1580.0	2040.0	2253.0
31	1480.0	1500.0	1560.0	2100.0	2293.0
32	1500.0	1540.0	1460.0	2000.0	2220.0
33	1500.0	1520.0	1400.0	1841.0	2240.0
34	1480.0	1400.0	1746.0	2218.0	2056.0
35	1460.0	1200.0	1640.0	1960.0	2220.0
36	1440.0	1463.0	1380.0	1900.0	2405.0

STACK # 1--SHAWVILLE STACKS 1&2 SRC-NOX
STACK # 2--SHAWVILLE STACK 3 AND 4 SRC-NOX NORMAL LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	160.00	0.00	182.88	3.81	21.82	391.00	248.77
2	NOM	261.00	0.00	99.06	3.73	18.84	386.00	205.87

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.26 1.09 0.98 0.87 1.10 0.92 0.87 1.08 0.98 0.80 1.05 1.00

YEAR BASED ON 365. DAYS

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

MAXIMUM MEAN CONC= 5.7530E-05 DIRECTION= 10 DISTANCE= 0.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1		5.55468E-05	5.61216E-05	5.47164E-05	5.35163E-05	5.28823E-05
2		5.61728E-05	5.67256E-05	5.51019E-05	5.37785E-05	5.31375E-05
3		5.64472E-05	5.69778E-05	5.59430E-05	5.50485E-05	5.40660E-05
4		5.61063E-05	5.65783E-05	5.58291E-05	5.50887E-05	5.40252E-05
5		5.54598E-05	5.58452E-05	5.54967E-05	5.49452E-05	5.38991E-05
6		5.53217E-05	5.56220E-05	5.56054E-05	5.51219E-05	5.39760E-05
7		5.57757E-05	5.61120E-05	5.63869E-05	5.59351E-05	5.44053E-05
8		5.65271E-05	5.69355E-05	5.69408E-05	5.61958E-05	5.45841E-05
9		5.72135E-05	5.73754E-05	5.68419E-05	5.59002E-05	5.44007E-05
10		5.75299E-05	5.71844E-05	5.62375E-05	5.52620E-05	5.40488E-05
11		5.71080E-05	5.63144E-05	5.51614E-05	5.43162E-05	5.33847E-05
12		5.60365E-05	5.53829E-05	5.45796E-05	5.39600E-05	5.32282E-05
13		5.49056E-05	5.45842E-05	5.39164E-05	5.34885E-05	5.30048E-05
14		5.40633E-05	5.39863E-05	5.34700E-05	5.31046E-05	5.27180E-05
15		5.35053E-05	5.35518E-05	5.31703E-05	5.29595E-05	5.26321E-05
16		5.30911E-05	5.31056E-05	5.27623E-05	5.25345E-05	5.23426E-05
17		5.28354E-05	5.28661E-05	5.26658E-05	5.25897E-05	5.23974E-05
18		5.26462E-05	5.26910E-05	5.25268E-05	5.24321E-05	5.22944E-05
19		5.25027E-05	5.25325E-05	5.24908E-05	5.24465E-05	5.23103E-05
20		5.24528E-05	5.24754E-05	5.23476E-05	5.22503E-05	5.21834E-05
21		5.24244E-05	5.24545E-05	5.23246E-05	5.22484E-05	5.21583E-05
22		5.24226E-05	5.24933E-05	5.24025E-05	5.23521E-05	5.22705E-05
23		5.25245E-05	5.27039E-05	5.25787E-05	5.25588E-05	5.24816E-05
24		5.27149E-05	5.30577E-05	5.29624E-05	5.30593E-05	5.29122E-05
25		5.28744E-05	5.33295E-05	5.34490E-05	5.37209E-05	5.34382E-05
26		5.29142E-05	5.33267E-05	5.32159E-05	5.32303E-05	5.30703E-05
27		5.29703E-05	5.33258E-05	5.30644E-05	5.31662E-05	5.30180E-05
28		5.32408E-05	5.34669E-05	5.33219E-05	5.33177E-05	5.29533E-05
29		5.38921E-05	5.40790E-05	5.39835E-05	5.40454E-05	5.34857E-05
30		5.45119E-05	5.45126E-05	5.40594E-05	5.37596E-05	5.31461E-05
31		5.45291E-05	5.44063E-05	5.38430E-05	5.33594E-05	5.28715E-05
32		5.40630E-05	5.39717E-05	5.33728E-05	5.29651E-05	5.26624E-05
33		5.35451E-05	5.35575E-05	5.31218E-05	5.27835E-05	5.25089E-05
34		5.32973E-05	5.33669E-05	5.29998E-05	5.27632E-05	5.25883E-05
35		5.33087E-05	5.33599E-05	5.29580E-05	5.26402E-05	5.24563E-05
36		5.66620E-05	5.71150E-05	5.50022E-05	5.34770E-05	5.27945E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.8931E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.0140E-04 (150)	1.0207E-04 (173)	8.3446E-05 (173)	7.1532E-05 (165)	6.9919E-05 (283)
2	1.1447E-04 (140)	1.0198E-04 (140)	8.1937E-05 (259)	7.0874E-05 (265)	6.9055E-05 (7)
3	1.3092E-04 (237)	1.0908E-04 (237)	9.1392E-05 (306)	1.1029E-04 (306)	9.2278E-05 (306)
4	1.2384E-04 (151)	1.0430E-04 (151)	9.8646E-05 (56)	1.0008E-04 (56)	8.4533E-05 (23)
5	1.2348E-04 (131)	9.7511E-05 (131)	9.0862E-05 (11)	8.6887E-05 (330)	7.6818E-05 (242)
6	1.0781E-04 (221)	9.8206E-05 (221)	1.0568E-04 (19)	1.0548E-04 (19)	7.9818E-05 (19)
7	1.1683E-04 (221)	1.0135E-04 (221)	1.1395E-04 (14)	1.1810E-04 (14)	9.6489E-05 (4)
8	1.0669E-04 (256)	9.9279E-05 (90)	1.2200E-04 (44)	1.1730E-04 (44)	9.0830E-05 (45)
9	1.1603E-04 (230)	1.0227E-04 (256)	1.1118E-04 (30)	1.2181E-04 (30)	9.8143E-05 (30)
10	1.4774E-04 (230)	1.1392E-04 (230)	1.4867E-04 (94)	1.2465E-04 (94)	1.0413E-04 (318)
11	1.3850E-04 (230)	1.0701E-04 (230)	1.0925E-04 (79)	1.1348E-04 (79)	8.5724E-05 (79)
12	1.3001E-04 (239)	9.7567E-05 (67)	1.0816E-04 (67)	9.7347E-05 (67)	7.4730E-05 (96)
13	1.1477E-04 (122)	9.5040E-05 (136)	8.6618E-05 (2)	8.3102E-05 (2)	7.7024E-05 (303)
14	1.3206E-04 (122)	9.9630E-05 (136)	8.4496E-05 (122)	7.6967E-05 (302)	7.3751E-05 (302)
15	1.2231E-04 (122)	9.4760E-05 (220)	9.4703E-05 (86)	9.1955E-05 (86)	7.5986E-05 (86)
16	1.0558E-04 (219)	9.4022E-05 (219)	7.3083E-05 (219)	7.4153E-05 (34)	6.7944E-05 (34)
17	1.1494E-04 (219)	9.9504E-05 (219)	7.4235E-05 (219)	6.8703E-05 (33)	6.7523E-05 (31)
18	1.0933E-04 (127)	1.0450E-04 (127)	7.8771E-05 (127)	8.5327E-05 (20)	7.2601E-05 (20)
19	1.1322E-04 (127)	1.0228E-04 (127)	7.8457E-05 (127)	8.2307E-05 (20)	7.6515E-05 (218)
20	1.2016E-04 (127)	9.6093E-05 (127)	7.7480E-05 (218)	7.3776E-05 (218)	6.5659E-05 (218)
21	1.0404E-04 (127)	8.8820E-05 (180)	7.5399E-05 (218)	6.5019E-05 (180)	6.0348E-05 (180)
22	1.0508E-04 (180)	9.1387E-05 (180)	8.0228E-05 (218)	8.0549E-05 (218)	6.8620E-05 (218)
23	9.2756E-05 (180)	8.4812E-05 (291)	8.1659E-05 (291)	8.7305E-05 (291)	8.4073E-05 (291)
24	9.5861E-05 (176)	1.0333E-04 (176)	9.1331E-05 (291)	8.6398E-05 (33)	8.3091E-05 (33)
25	8.7775E-05 (176)	9.5434E-05 (176)	1.1017E-04 (73)	1.2617E-04 (73)	9.7807E-05 (73)
26	9.2090E-05 (145)	9.6962E-05 (145)	7.6931E-05 (145)	8.3322E-05 (28)	8.9938E-05 (28)
27	8.3483E-05 (145)	9.3947E-05 (178)	8.0775E-05 (178)	8.3162E-05 (121)	8.8223E-05 (121)
28	9.1446E-05 (120)	8.5846E-05 (178)	7.4675E-05 (244)	9.4013E-05 (121)	8.7488E-05 (121)
29	1.1737E-04 (120)	9.7981E-05 (120)	9.5298E-05 (243)	1.0601E-04 (243)	9.0814E-05 (243)
30	1.1915E-04 (120)	1.0166E-04 (120)	8.5107E-05 (120)	8.9747E-05 (8)	7.6219E-05 (162)
31	1.3616E-04 (137)	1.0678E-04 (137)	1.0306E-04 (123)	1.1190E-04 (123)	8.7360E-05 (123)
32	1.1724E-04 (137)	9.0687E-05 (137)	7.3718E-05 (272)	7.7857E-05 (6)	7.1094E-05 (6)
33	9.8219E-05 (258)	8.7502E-05 (250)	7.0978E-05 (258)	6.8017E-05 (71)	6.6795E-05 (71)
34	1.0250E-04 (258)	8.4553E-05 (258)	6.8886E-05 (211)	7.0247E-05 (53)	7.2322E-05 (53)
35	9.3379E-05 (168)	8.3956E-05 (187)	7.4506E-05 (11)	7.1786E-05 (11)	6.2122E-05 (146)
36	1.8931E-04 (150)	1.4961E-04 (195)	1.0475E-04 (195)	8.0313E-05 (195)	6.9791E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 5.1726E-04 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	3.0184E-04 (146)	2.3470E-04 (146)	1.8455E-04 (228)	1.5454E-04 (165)	1.5553E-04 (283)
2	3.1932E-04 (238)	2.6163E-04 (140)	2.1517E-04 (259)	1.7064E-04 (17)	1.6939E-04 (7)
3	3.1253E-04 (237)	2.5955E-04 (237)	2.1999E-04 (24)	2.4652E-04 (306)	1.8255E-04 (306)
4	3.1696E-04 (131)	2.8680E-04 (23)	1.9943E-04 (225)	2.1715E-04 (15)	2.1913E-04 (23)
5	2.6548E-04 (131)	2.3442E-04 (301)	2.2568E-04 (18)	2.2982E-04 (242)	2.0258E-04 (242)
6	3.0062E-04 (236)	2.2633E-04 (221)	2.2596E-04 (18)	2.2538E-04 (1)	1.6507E-04 (37)
7	2.7589E-04 (236)	2.3182E-04 (14)	2.1757E-04 (16)	2.1979E-04 (14)	2.0303E-04 (308)
8	2.9217E-04 (245)	2.4271E-04 (30)	2.2223E-04 (9)	2.5339E-04 (4)	1.8950E-04 (45)
9	3.0432E-04 (224)	2.4201E-04 (30)	2.2697E-04 (9)	2.1961E-04 (42)	1.8994E-04 (30)
10	3.2777E-04 (230)	2.3089E-04 (148)	2.2010E-04 (2)	2.4507E-04 (326)	1.9549E-04 (326)
11	3.2676E-04 (239)	2.4812E-04 (326)	1.9330E-04 (337)	1.9300E-04 (79)	1.6857E-04 (22)
12	3.1870E-04 (239)	2.1353E-04 (229)	1.7797E-04 (67)	1.9433E-04 (252)	1.6099E-04 (318)
13	2.7710E-04 (136)	2.2649E-04 (136)	1.9549E-04 (2)	2.1634E-04 (2)	1.4403E-04 (13)
14	3.0216E-04 (136)	2.4018E-04 (220)	1.6918E-04 (340)	1.9003E-04 (340)	1.4233E-04 (13)
15	2.9365E-04 (122)	2.3187E-04 (219)	2.0118E-04 (34)	2.2259E-04 (19)	1.7424E-04 (19)
16	2.7444E-04 (219)	2.1480E-04 (220)	1.8205E-04 (126)	2.0674E-04 (126)	1.3598E-04 (126)
17	2.9880E-04 (219)	2.3179E-04 (219)	1.6368E-04 (185)	1.6640E-04 (20)	1.2822E-04 (19)
18	2.9109E-04 (219)	2.3665E-04 (127)	1.5620E-04 (214)	2.2424E-04 (20)	1.6312E-04 (20)
19	2.5443E-04 (127)	2.0288E-04 (127)	1.5516E-04 (20)	1.6576E-04 (20)	1.6472E-04 (218)
20	3.1089E-04 (127)	2.2550E-04 (127)	1.9386E-04 (20)	1.6292E-04 (218)	1.2947E-04 (218)
21	2.6749E-04 (127)	1.9886E-04 (218)	1.5873E-04 (218)	1.4323E-04 (72)	1.1871E-04 (87)
22	2.7026E-04 (180)	2.0979E-04 (180)	1.7124E-04 (218)	1.6181E-04 (218)	1.4496E-04 (291)
23	2.2618E-04 (176)	1.9044E-04 (291)	1.7098E-04 (291)	1.6318E-04 (291)	1.8287E-04 (291)
24	2.5255E-04 (176)	2.3865E-04 (235)	2.0416E-04 (32)	1.8507E-04 (242)	1.8473E-04 (28)
25	2.4542E-04 (235)	2.7108E-04 (235)	1.8232E-04 (235)	2.0310E-04 (32)	1.8777E-04 (43)
26	2.9882E-04 (145)	2.2098E-04 (341)	1.8706E-04 (69)	2.0955E-04 (48)	2.2816E-04 (28)
27	2.7456E-04 (145)	2.3494E-04 (181)	1.5881E-04 (35)	2.1030E-04 (227)	1.9514E-04 (227)
28	2.3296E-04 (161)	1.7985E-04 (178)	1.7000E-04 (334)	1.9835E-04 (121)	1.7406E-04 (121)
29	2.5585E-04 (21)	2.1448E-04 (244)	2.0262E-04 (76)	2.4000E-04 (243)	1.9516E-04 (243)
30	3.3248E-04 (21)	2.5604E-04 (21)	1.8676E-04 (333)	2.3408E-04 (8)	1.6555E-04 (87)
31	3.3331E-04 (137)	2.3769E-04 (333)	2.0400E-04 (123)	2.7465E-04 (10)	1.9769E-04 (10)
32	2.8116E-04 (137)	2.3234E-04 (334)	1.6399E-04 (6)	1.6676E-04 (6)	1.5349E-04 (6)
33	2.8923E-04 (250)	2.2552E-04 (250)	1.5344E-04 (149)	1.4686E-04 (149)	1.3410E-04 (71)
34	2.9462E-04 (135)	2.3058E-04 (150)	1.5834E-04 (11)	1.8947E-04 (53)	1.7868E-04 (53)
35	2.7538E-04 (135)	1.9460E-04 (59)	1.7579E-04 (11)	1.6170E-04 (11)	1.2007E-04 (259)
36	5.1726E-04 (150)	3.6858E-04 (150)	2.2066E-04 (142)	1.5750E-04 (232)	1.0919E-04 (232)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	1.8931E-04	36	0.83
195	1.4961E-04	36	1.66
173	1.4884E-04	36	1.66
94	1.4867E-04	10	3.32
230	1.4774E-04	10	0.83
197	1.3713E-04	36	1.66
191	1.3701E-04	36	1.66
137	1.3636E-04	31	0.83
239	1.3394E-04	11	0.83
189	1.3217E-04	36	1.66
122	1.3206E-04	14	0.83
237	1.3092E-04	3	0.83
247	1.3064E-04	11	0.83
73	1.2637E-04	25	6.65
111	1.2614E-04	12	0.83
103	1.2537E-04	12	0.83
166	1.2488E-04	31	0.83
136	1.2407E-04	14	0.83
148	1.2390E-04	10	0.83
151	1.2384E-04	4	0.83

PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY PROJECT 7101

STACK # 1--SHAWVILLE STACK 1 (MAX. COND.) SRC NOX
STACK # 2--SHAWVILLE STACK 3&4 SRC-NOX MAXIMUM LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOX	206.00	0.00	182.88	3.81	29.38	403.00	334.96
2	NOX	313.00	0.00	99.06	3.73	22.52	396.00	246.08

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IMO= 3 JDAY= 73
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 7.2 7.2 9.8 8.9 8.9 8.5 8.5 8.1 8.9 8.9 9.8 10.3 8.1 7.6 6.3 5.8 5.8 5.8 4.5 4.5 4.0 3.1 3.1 2.2
TEMP= 271. 271. 270. 270. 270. 269. 268. 269. 268. 269. 269. 270. 270. 270. 270. 270. 270. 269. 269. 270. 270. 270. 270. 269.
AFV= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
AFVR= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
HLH1= 801. 801. 801. 801. 801. 801. 770. 739. 708. 677. 646. 615.
584. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553.

JYR=75 IMO= 4 JDAY= 94
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 14.8 13.4 16.1 15.6 12.5 12.5 11.6 12.1 14.8 16.1 15.6 17.4 16.1 15.6 15.6 15.2 15.2 14.8 12.5 10.3 9.4 9.8 10.7 9.8
TEMP= 268. 267. 267. 267. 266. 266. 266. 266. 267. 267. 267. 268. 269. 269. 268. 268. 268. 267. 267. 266. 266. 266. 266. 266.
AFV= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
AFVR= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
HLH1= 600. 600. 600. 600. 600. 600. 600. 720. 840. 960. 1080. 1170.
1260. 1350. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.

JYR=75 IMO= 4 JDAY=103
ISTAB= 4 4 4 4 4 4 4 3 2 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.4 5.4 5.8 6.3 5.8 5.4 4.5 4.0 5.4 6.7 6.3 6.3 7.2 7.2 7.2 6.7 5.8 5.4 5.4 5.8 5.8 5.4 4.5 3.6
TEMP= 270. 269. 269. 269. 267. 267. 267. 270. 273. 274. 275. 275. 275. 275. 276. 277. 278. 279. 276. 274. 273. 272. 271. 270.
AFV= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
AFVR= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
HLH1= 822. 822. 822. 822. 822. 822. 1039. 1257. 1474. 1692. 1909. 2127.
2344. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561.

JYR=75 IMO= 4 JDAY=111
ISTAB= 3 3 3 3 3 4 3 3 1 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.8 5.8 8.5 6.7 6.3 4.5 4.9 7.2 8.1 8.1 8.1 7.2 7.6 7.2 7.2 8.1 7.2 6.7 6.3 6.3 5.4 6.3 2.7 3.1
TEMP= 275. 275. 275. 274. 274. 272. 273. 274. 275. 275. 276. 277. 279. 280. 281. 281. 282. 281. 280. 277. 276. 275. 274. 274.
AFV= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
AFVR= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
HLH1= 2000. 2000. 2000. 2000. 2000. 2000. 2002. 2005. 2008. 2010. 2013. 2016.
2018. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021.

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JYR=75 IHR= 5 JDAY=122
ISTAR=  3   3   4   4   4   4   4   3   2   2   1   1   1   1   1   1   1   1   1   3   3   4   4   4   4
AWS=  1.4  1.3  0.4  1.3  3.1  4.5  4.9  6.3  6.7  6.7  7.2  7.2  7.2  6.3  6.3  6.7  8.1  7.6  1.9  6.7  3.1  2.7  2.2  2.2
TEMP= 280. 280. 280. 280. 280. 291. 282. 284. 285. 295. 287. 288. 289. 290. 291. 291. 291. 291. 299. 287. 283. 283. 281. 281.
AFV=  252. 121.   6.  53.  63. 121. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
AFVR= 252. 121.   6.  53.  63. 121. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
HLHI= 598. 598. 598. 598. 598. 598. 723. 848. 973. 1098. 1223. 1347.
      1472. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597.


JYR=75 IHR= 5 JDAY=136
ISTAR=  4   4   4   4   4   4   4   2   1   1   1   1   1   1   1   1   1   1   2   4   4   4   4   4
AWS=  1.8  2.2  3.1  4.0  2.7  2.2  3.6  4.0  4.0  4.9  4.5  5.4  4.9  4.9  4.9  4.9  4.5  4.9  5.4  5.8  4.9  4.5  4.5  4.9
TEMP= 286. 286. 285. 285. 285. 285. 285. 286. 288. 289. 291. 292. 294. 294. 295. 295. 295. 295. 292. 290. 288. 286. 285. 284.
AFV=   32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
AFVR=  32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
HLHI= 1148. 1148. 1148. 1148. 1148. 1148. 1166. 1145. 1123. 1102. 1080. 1059.
      1037. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016.


JYR=75 IHR= 5 JDAY=137
ISTAR=  4   4   4   4   4   4   4   2   1   1   1   1   1   1   1   1   1   1   2   3   3   3   4   4   4
AWS=  3.6  4.0  2.7  3.1  4.5  5.4  6.7  5.8  5.4  4.5  5.4  5.8  5.4  5.8  6.3  5.4  5.4  5.8  5.8  4.5  6.7  7.2  4.0  3.1  3.6
TEMP= 281. 282. 281. 280. 279. 279. 281. 285. 288. 291. 294. 295. 297. 296. 296. 295. 295. 294. 292. 291. 289. 288. 287. 287.
AFV=  245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   8. 351. 335. 329.
AFVR= 245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   8. 351. 335. 329.
HLHI=  312.  312.  312.  312.  312.  317.  439.  566.  693.  820.  947. 1074.
      1200. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IHR= 5 JDAY=148
ISTAR=  4   4   4   4   4   4   4   4   1   1   1   1   1   1   1   1   1   1   1   2   4   4   4   4   4
AWS=  3.1  1.3  2.2  2.7  2.7  2.7  3.1  3.1  1.8  3.1  4.9  5.4  4.5  4.5  4.0  4.0  4.0  3.6  4.0  5.8  6.7  4.5  2.2  2.2
TEMP= 284. 283. 282. 281. 280. 280. 282. 286. 289. 291. 292. 293. 295. 296. 297. 298. 298. 298. 296. 293. 290. 289. 287. 285.
AFV=  137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
AFVR= 137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
HLHI=  473.  473.  473.  473.  473.  473.  631.  792.  952. 1111. 1271. 1431.
      1590. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750.


JYR=75 IHR= 5 JDAY=150
ISTAR=  4   3   4   4   4   4   4   4   1   1   1   1   1   1   1   1   1   1   1   2   3   3   4   4   4
AWS=  5.8  7.6  6.7  6.7  7.2  6.3  7.6  6.3  3.1  4.0  4.9  4.0  4.0  4.5  4.9  4.5  5.4  3.1  4.0  3.1  3.1  4.9  4.5  3.6
TEMP= 283. 283. 283. 283. 283. 283. 283. 283. 293. 294. 294. 295. 297. 300. 299. 299. 299. 297. 296. 294. 294. 293. 293. 292.
AFV=   30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
AFVR=  30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
HLHI=  982.  982.  982.  982.  982.  982. 1018. 1055. 1092. 1128. 1165. 1201.
      1238. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275.


JYR=75 IHR= 5 JDAY=151
ISTAR=  4   4   4   4   4   4   4   3   2   2   1   1   1   1   1   3   2   3   4   4   3   4   4   4
AWS=  3.6  2.2  3.1  4.0  4.0  5.4  5.8  5.8  7.2  6.7  8.1  8.1  8.5  8.9  9.4  5.8  4.9  3.6  4.0  3.6  5.4  4.5  4.5  5.4
TEMP= 291. 291. 291. 290. 290. 290. 290. 293. 295. 295. 297. 297. 298. 299. 299. 297. 297. 297. 296. 295. 294. 292. 292. 291.
AFV=   21.  22.  29.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
AFVR=  21.  22.  29.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
HLHI=  863.  863.  863.  863.  863.  863.  911.  960. 1008. 1057. 1105. 1153.
      1202. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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JYR=75 [illegible]= 6 JDAY=166
ISTAR=  4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    2    3    4    4    3    4
AWS=  1.8  1.8  1.8  0.9  0.9  2.7  3.1  1.8  1.3  3.6  4.5  6.7  8.5  8.5  9.4  8.9  9.4  7.2  7.2  7.2  7.6  7.2  8.5  6.3
TEMP= 289. 287. 287. 287. 286. 286. 288. 290. 294. 297. 300. 301. 301. 302. 301. 301. 301. 300. 299. 298. 296. 296. 294. 290.
AFV=  352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
AFVR= 352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
HLHI=  356.  356.  356.  356.  356.  356.  515.  673.  832.  990. 1149. 1308.
      1466. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625.


JYR=75 I40= 6 JDAY=173
ISTAR=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  0.4  2.2  2.2  2.2  1.3  0.0  0.0  0.9  1.3  2.2  2.7  2.2  3.1  2.7  2.2  1.3  3.1  3.6  7.2  3.1  3.6  3.1  3.1  2.7
TEMP= 288. 287. 287. 286. 286. 286. 288. 292. 295. 297. 299. 301. 302. 302. 302. 304. 303. 300. 299. 296. 295. 294. 294. 292.
AFV=  211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
AFVR= 211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
HLHI=  340.  340.  340.  340.  340.  340.  458.  577.  695.  814.  932. 1051.
      1169. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288.


JYR=75 I40= 7 JDAY=189
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  1.3  1.3  1.3  1.8  1.8  1.8  0.4  2.7  1.8  1.3  1.3  2.7  2.7  2.7  3.6  2.7  3.6  4.5  4.5  3.1  1.3  2.7  2.2  3.1
TEMP= 289. 289. 288. 288. 288. 288. 288. 290. 291. 294. 298. 300. 302. 303. 301. 300. 301. 299. 297. 296. 295. 294. 294. 293.
AFV=  342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
AFVR= 342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
HLHI=  609.  609.  609.  609.  609.  609.  750.  890. 1031. 1171. 1312. 1453.
      1593. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734.


JYR=75 I40= 7 JDAY=191
ISTAR=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    2    2    3    3    4    4    4
AWS=  1.3  1.8  0.9  1.3  0.9  1.3  2.2  0.4  0.4  1.3  2.2  2.2  2.7  4.0  2.7  4.0  3.1  4.5  5.4  1.0  1.0  1.0  1.3  2.7
TEMP= 289. 287. 286. 285. 285. 284. 287. 290. 293. 296. 297. 297. 298. 299. 301. 301. 283. 283. 283. 283. 283. 283. 287. 287.
AFV=   19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
AFVR=  19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
HLHI=  542.  542.  542.  542.  542.  542.  716.  890. 1065. 1239. 1413. 1588.
      1762. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936.


JYR=75 I40= 7 JDAY=195
ISTAR=  3    3    4    4    4    4    4    3    1    1    1    1    1    1    1    3    1    1    3    4    4    4    4    4
AWS=  2.2  2.2  2.7  2.7  1.8  1.3  1.3  1.3  1.3  2.7  3.6  3.6  3.6  3.1  3.6  4.0  3.6  3.6  3.6  3.1  2.7  1.8  0.4  0.9  2.2
TEMP= 291. 290. 290. 290. 290. 290. 290. 291. 292. 293. 296. 297. 299. 299. 299. 295. 297. 297. 294. 292. 292. 292. 291. 291. 291.
AFV=  323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
AFVR= 324. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
HLHI=  660.  660.  660.  660.  660.  660.  743.  827.  910.  994. 1077. 1160.
      1244. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 I40= 7 JDAY=197
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.1  4.0  2.2  0.4  0.0  0.0  0.4  0.4  1.3  2.7  2.7  3.6  2.7  2.7  2.2  2.2  3.1  3.1  3.1  3.1  0.9  2.2  1.8  0.9
TEMP= 291. 291. 291. 291. 291. 291. 291. 292. 294. 296. 299. 299. 298. 301. 301. 301. 300. 299. 297. 295. 295. 294. 293. 292.
AFV=  253. 279. 286. 300. 305. 292. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
AFVR= 259. 279. 286. 300. 305. 292. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
HLHI=  640.  640.  640.  640.  640.  640.  832. 1024. 1216. 1408. 1600. 1793.
      1985. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177.
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JYR=75 IMO= 4 JDAY=240
ISTAR= 4 4 4 4 4 4 4 3 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 4.0 3.6 4.9 4.9 4.5 5.4 4.5 3.6 4.0 5.4 5.8 5.4 5.8 6.3 7.2 6.3 6.3 5.8 6.3 6.7 7.6 6.7 3.1 3.6
TEMP= 290. 290. 289. 289. 289. 290. 291. 292. 293. 294. 295. 296. 296. 297. 297. 297. 298. 297. 295. 292. 291. 290. 289. 288.
AFV= 40. 49. 47. 61. 77. 106. 107. 110. 108. 94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
AFVR= 40. 49. 47. 61. 77. 106. 107. 110. 108. 94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
HLHI= 967. 967. 967. 967. 967. 967. 1073. 1179. 1284. 1390. 1496. 1601.
1707. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813.

JYR=75 IMO= 8 JDAY=237
ISTAR= 4 4 4 4 4 4 4 3 1 1 1 1 1 1 1 1 1 2 2 3 4 4 4 4 4
AWS= 7.6 5.8 4.5 4.0 4.9 4.9 4.5 4.0 4.5 4.0 4.0 5.8 5.4 6.7 8.1 8.5 8.5 7.6 7.2 6.3 4.9 4.5 4.9 4.0
TEMP= 295. 294. 294. 293. 293. 292. 293. 294. 296. 297. 299. 300. 301. 302. 301. 302. 301. 301. 299. 298. 296. 295. 294. 293.
AFV= 47. 51. 49. 27. 30. 27. 31. 37. 34. 33. 32. 39. 25. 26. 37. 45. 47. 48. 40. 45. 47. 39. 39. 21.
AFVR= 47. 51. 49. 27. 30. 27. 31. 37. 34. 33. 32. 39. 25. 26. 37. 45. 47. 48. 40. 45. 47. 39. 39. 21.
HLHI= 501. 501. 501. 501. 501. 501. 538. 574. 611. 648. 684. 721.
759. 795. 795. 795. 795. 795. 795. 795. 795. 795. 795. 795.

JYR=75 IMO= 8 JDAY=239
ISTAR= 4 4 4 4 4 4 4 4 3 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 6.3 5.4 4.5 3.6 2.7 3.6 4.0 3.1 2.2 3.6 4.9 6.3 8.1 7.6 6.3 7.2 6.3 5.4 6.7 7.2 6.3 4.9 4.9 3.6
TEMP= 290. 290. 289. 288. 288. 287. 287. 288. 290. 294. 296. 297. 298. 298. 299. 299. 299. 299. 296. 293. 291. 289. 287. 286.
AFV= 114. 115. 109. 104. 85. 48. 53. 47. 57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
AFVR= 114. 115. 109. 104. 85. 48. 53. 47. 57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
HLHI= 439. 439. 439. 439. 439. 439. 544. 649. 754. 859. 965. 1070.
1175. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280.

JYR=75 IMO= 9 JDAY=247
ISTAR= 4 4 4 4 4 4 4 4 3 1 1 1 1 1 1 1 1 1 2 4 4 4 4 4 4
AWS= 0.4 0.4 1.3 2.7 3.1 4.5 4.0 4.0 5.4 6.7 6.7 6.7 6.7 7.2 8.1 7.2 7.2 8.5 6.3 5.4 4.0 4.9 6.3 4.5
TEMP= 286. 286. 286. 286. 286. 287. 287. 288. 290. 291. 293. 294. 295. 296. 295. 295. 295. 294. 291. 290. 288. 288. 286. 285.
AFV= 47. 45. 25. 36. 37. 31. 32. 77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
AFVR= 47. 45. 25. 36. 37. 31. 32. 77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
HLHI= 35. 35. 35. 35. 35. 35. 172. 308. 445. 581. 718. 855.
991. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128.

YEAR BASED ON 20. DAYS

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

MAXIMUM MEAN CONC= 8.1688E-05 DIRECTION= 36 DISTANCE= 1.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.1 KM	6.7 KM	13.1 KM
1	6.41888E-05	6.64437E-05	6.07691E-05	5.67585E-05	5.47049E-05
2	6.13899E-05	6.14770E-05	5.72398E-05	5.47863E-05	5.37954E-05
3	6.03461E-05	5.94051E-05	5.64815E-05	5.46761E-05	5.35821E-05
4	5.94741E-05	5.81632E-05	5.57599E-05	5.40822E-05	5.30454E-05
5	5.63477E-05	5.54214E-05	5.41323E-05	5.31405E-05	5.27571E-05
6	5.35705E-05	5.31451E-05	5.27015E-05	5.23341E-05	5.23121E-05
7	5.31000E-05	5.26800E-05	5.24767E-05	5.22668E-05	5.21336E-05
8	5.53358E-05	5.38936E-05	5.30934E-05	5.29196E-05	5.25488E-05
9	6.11868E-05	5.77187E-05	5.49979E-05	5.34991E-05	5.27048E-05
10	7.01689E-05	6.55631E-05	6.30485E-05	5.93492E-05	5.57081E-05
11	7.66155E-05	6.76480E-05	5.94280E-05	5.58483E-05	5.41117E-05
12	7.51280E-05	6.57318E-05	5.83244E-05	5.52326E-05	5.36089E-05
13	6.91770E-05	6.22767E-05	5.63607E-05	5.36318E-05	5.26993E-05
14	6.35396E-05	5.89905E-05	5.56931E-05	5.45084E-05	5.34181E-05
15	5.94506E-05	5.65369E-05	5.40752E-05	5.30864E-05	5.25622E-05
16	5.58427E-05	5.42356E-05	5.28249E-05	5.23106E-05	5.21460E-05
17	5.34086E-05	5.27426E-05	5.22479E-05	5.20896E-05	5.20397E-05
18	5.24259E-05	5.23321E-05	5.23273E-05	5.23754E-05	5.22265E-05
19	5.22518E-05	5.24534E-05	5.23128E-05	5.21280E-05	5.20607E-05
20	5.20980E-05	5.21713E-05	5.20987E-05	5.20318E-05	5.20113E-05
21	5.20094E-05	5.20103E-05	5.20033E-05	5.20005E-05	5.20001E-05
22	5.20004E-05	5.20002E-05	5.20016E-05	5.20012E-05	5.20002E-05
23	5.20033E-05	5.20021E-05	5.20490E-05	5.20752E-05	5.20342E-05
24	5.20381E-05	5.20481E-05	5.25771E-05	5.33251E-05	5.32466E-05
25	5.22362E-05	5.25197E-05	5.47760E-05	5.60824E-05	5.47736E-05
26	5.25911E-05	5.28306E-05	5.34322E-05	5.35226E-05	5.30988E-05
27	5.27656E-05	5.26796E-05	5.25643E-05	5.24652E-05	5.24483E-05
28	5.31105E-05	5.27183E-05	5.22945E-05	5.21303E-05	5.20631E-05
29	5.46937E-05	5.35089E-05	5.25423E-05	5.22910E-05	5.25379E-05
30	5.82153E-05	5.55967E-05	5.33346E-05	5.24738E-05	5.22188E-05
31	6.11682E-05	5.77517E-05	5.43444E-05	5.28737E-05	5.24284E-05
32	6.01772E-05	5.74320E-05	5.43610E-05	5.30069E-05	5.27526E-05
33	5.72775E-05	5.60355E-05	5.44988E-05	5.38009E-05	5.30430E-05
34	5.61495E-05	5.59000E-05	5.41162E-05	5.28719E-05	5.23998E-05
35	5.73441E-05	5.73332E-05	5.49412E-05	5.35635E-05	5.28872E-05
36	7.82350E-05	8.16878E-05	6.80271E-05	5.93852E-05	5.58903E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.8130E-04 DIRECTION=360. DISTANCE= 0.0 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.1 KM	6.7 KM	13.3 KM
1	9.7893E-05 (150)	1.0599E-04 (197)	8.9211E-05 (173)	7.5095E-05 (173)	6.6195E-05 (173)
2	1.1141E-04 (237)	9.0121E-05 (237)	7.2198E-05 (197)	6.4152E-05 (197)	6.0680E-05 (197)
3	1.2961E-04 (237)	1.0999E-04 (237)	8.3966E-05 (237)	7.3687E-05 (237)	6.6236E-05 (237)
4	1.2320E-04 (151)	1.0332E-04 (151)	8.2503E-05 (237)	7.0182E-05 (237)	6.1440E-05 (237)
5	1.0391E-04 (151)	8.6563E-05 (151)	6.6893E-05 (151)	5.9188E-05 (166)	5.7197E-05 (239)
6	7.0757E-05 (151)	6.2114E-05 (151)	5.6015E-05 (189)	5.4809E-05 (189)	5.5918E-05 (148)
7	5.9974E-05 (148)	5.6537E-05 (148)	5.7849E-05 (189)	5.6377E-05 (189)	5.4146E-05 (189)
8	7.8467E-05 (230)	6.8566E-05 (148)	5.8045E-05 (111)	6.4128E-05 (111)	6.0145E-05 (111)
9	1.1618E-04 (230)	8.9894E-05 (230)	6.6598E-05 (230)	6.1761E-05 (94)	5.6857E-05 (94)
10	1.4775E-04 (230)	1.1431E-04 (230)	1.6754E-04 (94)	1.4690E-04 (94)	9.7547E-05 (94)
11	1.4472E-04 (111)	1.0785E-04 (230)	8.3524E-05 (247)	7.6547E-05 (247)	6.7858E-05 (247)
12	1.4635E-04 (111)	1.0688E-04 (111)	8.0836E-05 (111)	7.1278E-05 (111)	6.2383E-05 (111)
13	1.2780E-04 (103)	9.8537E-05 (103)	7.1857E-05 (103)	6.0476E-05 (136)	5.6164E-05 (136)
14	1.3230E-04 (122)	9.9254E-05 (136)	8.1329E-05 (122)	7.4871E-05 (122)	6.4559E-05 (122)
15	1.2295E-04 (122)	9.3825E-05 (122)	7.0144E-05 (122)	5.9489E-05 (148)	5.6426E-05 (148)
16	9.0092E-05 (122)	7.5401E-05 (136)	6.0951E-05 (136)	5.5860E-05 (136)	5.3914E-05 (136)
17	6.8193E-05 (136)	6.1709E-05 (136)	5.5498E-05 (136)	5.3398E-05 (136)	5.2643E-05 (136)
18	5.8372E-05 (136)	5.7898E-05 (136)	5.8377E-05 (136)	5.9472E-05 (136)	5.6520E-05 (136)
19	5.6818E-05 (136)	6.1011E-05 (136)	5.8246E-05 (136)	5.4558E-05 (136)	5.3214E-05 (136)
20	5.3948E-05 (136)	5.5424E-05 (136)	5.3974E-05 (136)	5.2636E-05 (136)	5.2226E-05 (136)
21	5.2189E-05 (136)	5.2205E-05 (136)	5.2065E-05 (136)	5.2010E-05 (136)	5.2001E-05 (136)
22	5.2004E-05 (136)	5.2002E-05 (136)	5.2031E-05 (166)	5.2024E-05 (166)	5.2004E-05 (166)
23	5.2066E-05 (137)	5.2027E-05 (137)	5.2932E-05 (166)	5.3487E-05 (166)	5.2682E-05 (166)
24	5.2757E-05 (137)	5.2593E-05 (137)	5.7074E-05 (73)	6.6171E-05 (73)	6.8667E-05 (73)
25	5.6548E-05 (137)	5.7297E-05 (73)	1.0388E-04 (73)	1.3105E-04 (73)	1.0634E-04 (73)
26	6.3343E-05 (137)	6.5642E-05 (137)	7.1929E-05 (73)	7.7994E-05 (73)	7.1601E-05 (73)
27	6.4467E-05 (137)	6.2955E-05 (137)	5.7628E-05 (137)	5.7729E-05 (73)	5.6504E-05 (166)
28	6.3610E-05 (137)	5.9059E-05 (137)	5.4906E-05 (166)	5.3296E-05 (137)	5.2630E-05 (166)
29	6.0383E-05 (166)	6.8257E-05 (166)	5.8221E-05 (166)	5.4547E-05 (166)	6.0887E-05 (195)
30	1.1309E-04 (166)	8.6002E-05 (137)	6.4852E-05 (137)	5.6734E-05 (137)	5.4200E-05 (137)
31	1.4015E-04 (166)	1.0686E-04 (137)	7.5266E-05 (137)	6.1241E-05 (137)	5.6510E-05 (137)
32	1.2471E-04 (166)	9.6885E-05 (166)	6.9513E-05 (166)	5.8111E-05 (166)	5.8501E-05 (195)
33	8.9669E-05 (166)	7.2758E-05 (166)	6.4514E-05 (166)	6.0916E-05 (166)	5.7568E-05 (137)
34	8.0396E-05 (150)	7.8663E-05 (150)	6.6884E-05 (150)	5.8117E-05 (150)	5.4797E-05 (150)
35	8.6295E-05 (150)	7.7115E-05 (150)	6.3137E-05 (197)	6.0058E-05 (150)	5.9008E-05 (150)
36	1.8130E-04 (150)	1.6319E-04 (195)	1.1708E-04 (195)	8.6102E-05 (195)	6.9745E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 4.9002E-04 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150, HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	2.4935E-04 (150)	2.4474E-04 (191)	1.6239E-04 (173)	1.2466E-04 (173)	1.0767E-04 (173)
2	1.9836E-04 (237)	1.9735E-04 (197)	1.4306E-04 (197)	8.8799E-05 (197)	9.8282E-05 (189)
3	1.9238E-04 (237)	2.4901E-04 (237)	1.8908E-04 (237)	1.3544E-04 (237)	1.3034E-04 (237)
4	1.1902E-04 (151)	2.4035E-04 (237)	1.7262E-04 (237)	1.3701E-04 (237)	9.8106E-05 (237)
5	2.4507E-04 (151)	1.8571E-04 (151)	1.1822E-04 (151)	1.0151E-04 (173)	9.3579E-05 (239)
6	1.2450E-04 (151)	1.0114E-04 (151)	8.4117E-05 (189)	7.4475E-05 (189)	8.3275E-05 (148)
7	1.0540E-04 (148)	8.1931E-05 (148)	9.8795E-05 (189)	8.7012E-05 (189)	7.0770E-05 (189)
8	2.0709E-04 (148)	1.4795E-04 (148)	9.8578E-05 (111)	1.4870E-04 (111)	1.1708E-04 (111)
9	2.8718E-04 (148)	2.1161E-04 (148)	1.4125E-04 (94)	1.2952E-04 (94)	9.0834E-05 (94)
10	3.2472E-04 (230)	2.2551E-04 (148)	1.8673E-04 (94)	1.8067E-04 (94)	1.1867E-04 (94)
11	3.3286E-04 (239)	2.1609E-04 (247)	1.3895E-04 (247)	1.4004E-04 (247)	1.1901E-04 (247)
12	3.2585E-04 (239)	2.0349E-04 (239)	1.3520E-04 (111)	1.2170E-04 (111)	9.0148E-05 (111)
13	2.8475E-04 (103)	2.1552E-04 (136)	1.4287E-04 (136)	9.1009E-05 (136)	7.0908E-05 (136)
14	3.0008E-04 (122)	2.1004E-04 (136)	1.3795E-04 (122)	1.4594E-04 (122)	1.0374E-04 (122)
15	2.9733E-04 (122)	1.9484E-04 (136)	1.1127E-04 (122)	1.1190E-04 (148)	8.7404E-05 (148)
16	2.2578E-04 (136)	1.4701E-04 (136)	9.7738E-05 (136)	7.2463E-05 (136)	6.2443E-05 (136)
17	1.4449E-04 (136)	1.0949E-04 (136)	7.3488E-05 (136)	6.1034E-05 (136)	5.6325E-05 (136)
18	9.6340E-05 (136)	9.5361E-05 (136)	1.0167E-04 (136)	1.1141E-04 (136)	8.8051E-05 (136)
19	8.9970E-05 (136)	1.2387E-04 (136)	1.0190E-04 (136)	7.2451E-05 (136)	6.1712E-05 (136)
20	6.7552E-05 (136)	7.9388E-05 (136)	6.7790E-05 (136)	5.7089E-05 (136)	5.3806E-05 (136)
21	5.3511E-05 (136)	5.3643E-05 (136)	5.2520E-05 (136)	5.2081E-05 (136)	5.2012E-05 (136)
22	5.2031E-05 (136)	5.2015E-05 (136)	5.2246E-05 (166)	5.2188E-05 (166)	5.2036E-05 (166)
23	5.2527E-05 (137)	5.2217E-05 (137)	5.9457E-05 (166)	6.3898E-05 (166)	5.7458E-05 (166)
24	5.8055E-05 (137)	5.6743E-05 (137)	8.4215E-05 (73)	1.1685E-04 (73)	1.5693E-04 (73)
25	8.9186E-05 (137)	9.2501E-05 (137)	1.7489E-04 (73)	1.9361E-04 (73)	1.7747E-04 (73)
26	1.4258E-04 (137)	1.6110E-04 (137)	1.3408E-04 (73)	1.4167E-04 (73)	1.0916E-04 (73)
27	1.4891E-04 (137)	1.3880E-04 (137)	9.6881E-05 (137)	9.7708E-05 (73)	8.8027E-05 (166)
28	1.2201E-04 (137)	9.9613E-05 (166)	7.3451E-05 (166)	6.1914E-05 (166)	5.6940E-05 (166)
29	1.5128E-04 (166)	1.3142E-04 (166)	8.7657E-05 (166)	6.8776E-05 (166)	1.0380E-04 (195)
30	2.5397E-04 (137)	1.6784E-04 (137)	9.4952E-05 (137)	6.9871E-05 (137)	6.0915E-05 (137)
31	3.2480E-04 (137)	2.1899E-04 (137)	1.3477E-04 (137)	8.3298E-05 (137)	6.7082E-05 (137)
32	2.7827E-04 (137)	1.8623E-04 (166)	1.1301E-04 (166)	7.3138E-05 (166)	1.0391E-04 (195)
33	1.9760E-04 (150)	1.7956E-04 (150)	1.1734E-04 (150)	1.1013E-04 (166)	9.1350E-05 (137)
34	2.4639E-04 (150)	2.1250E-04 (150)	1.5182E-04 (150)	9.4095E-05 (150)	7.1133E-05 (150)
35	2.3002E-04 (150)	1.8199E-04 (195)	1.1910E-04 (197)	1.0449E-04 (137)	9.7737E-05 (150)
36	4.9002E-04 (150)	3.8631E-04 (195)	2.4858E-04 (173)	1.5101E-04 (173)	1.0671E-04 (195)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	1.8130E-04	36	0.83
94	1.6754E-04	10	3.32
195	1.6339E-04	36	1.66
173	1.5250E-04	36	1.66
230	1.4775E-04	10	0.83
197	1.4731E-04	36	1.66
191	1.4712E-04	36	1.66
111	1.4635E-04	12	0.83
189	1.4481E-04	36	1.66
103	1.4412E-04	12	0.83
166	1.4015E-04	31	0.83
247	1.4008E-04	11	0.83
219	1.3494E-04	11	0.83
137	1.3422E-04	31	0.83
122	1.3230E-04	14	0.83
73	1.3105E-04	25	6.65
237	1.2961E-04	3	0.83
151	1.2320E-04	4	0.83
136	1.2082E-04	14	0.83
148	1.1907E-04	10	0.83

```
PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

SEWARD PLANT 1975

$NAM1
NSTG=4  IUR=1  ITAP,IPUN= 2 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  HST= 1
NPOL= 2   JTAR= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     52.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1120.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1085.0	1130.0	1200.0	1350.0	1600.0
2	1090.0	1150.0	1370.0	1500.0	1500.0
3	1100.0	1200.0	1250.0	1400.0	1500.0
4	1115.0	1120.0	1400.0	1440.0	1450.0
5	1120.0	1100.0	1250.0	1420.0	1550.0
6	1130.0	1240.0	1140.0	1440.0	1500.0
7	1130.0	1300.0	1100.0	1300.0	1720.0
8	1135.0	1280.0	1400.0	1150.0	1720.0
9	1150.0	1240.0	1350.0	1400.0	1950.0
10	1145.0	1240.0	1450.0	1800.0	2100.0
11	1135.0	1250.0	1500.0	1950.0	1800.0
12	1120.0	1210.0	1550.0	2100.0	2460.0
13	1120.0	1260.0	1500.0	2100.0	2560.0
14	1120.0	1220.0	1500.0	2000.0	2500.0
15	1120.0	1220.0	1400.0	1850.0	2530.0
16	1100.0	1280.0	1350.0	1700.0	2450.0
17	1100.0	1210.0	1450.0	1640.0	2200.0
18	1100.0	1140.0	1350.0	1620.0	1900.0
19	1070.0	1100.0	1200.0	1600.0	1400.0
20	1080.0	1080.0	1100.0	1540.0	1300.0
21	1240.0	1080.0	1080.0	1300.0	1210.0
22	1210.0	1090.0	1080.0	1080.0	1210.0
23	1270.0	1230.0	1150.0	1080.0	1400.0
24	1420.0	1250.0	1200.0	1200.0	1060.0
25	1485.0	1350.0	1240.0	1300.0	1400.0
26	1500.0	1470.0	1300.0	1400.0	1350.0
27	1420.0	1560.0	1470.0	1460.0	1570.0
28	1310.0	1540.0	1540.0	1400.0	1660.0
29	1440.0	1400.0	1400.0	1550.0	1660.0
30	1550.0	1320.0	1400.0	1600.0	1710.0
31	1550.0	1300.0	1540.0	1620.0	1770.0
32	1560.0	1330.0	1400.0	1700.0	1750.0
33	1530.0	1550.0	1550.0	1800.0	1700.0
34	1400.0	1400.0	1680.0	1550.0	1600.0
35	1250.0	1330.0	1300.0	1580.0	1620.0
36	1180.0	1200.0	1350.0	1350.0	1620.0

STACK 0 1--SEWARD STACK 1 COAL NOX
STACK 0 2--SEWARD STACK 2 COAL NORMAL

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	52.00	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	115.00	0.00	68.60	1.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.03 0.91 0.99 1.10 1.03 0.99 1.13 1.09 1.10 0.92 0.87 0.81

YEAR BASED ON 365. DAYS

PENN. ELEC. SEWARD

NOM--SO2

MAXIMUM MEAN CONC= 5.5503E-05 DIRECTION= 8 DISTANCE= 3.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	5.24108E-05	5.24893E-05	5.25270E-05	5.25367E-05	5.24987E-05
2	5.24865E-05	5.25462E-05	5.25705E-05	5.25778E-05	5.25475E-05
3	5.27807E-05	5.29729E-05	5.30416E-05	5.30489E-05	5.29584E-05
4	5.32116E-05	5.35998E-05	5.37610E-05	5.37968E-05	5.36367E-05
5	5.37176E-05	5.44973E-05	5.48047E-05	5.48461E-05	5.45120E-05
6	5.37311E-05	5.40757E-05	5.42534E-05	5.42980E-05	5.40934E-05
7	5.36725E-05	5.44291E-05	5.48536E-05	5.50567E-05	5.48865E-05
8	5.35990E-05	5.46370E-05	5.52185E-05	5.55029E-05	5.53324E-05
9	5.34055E-05	5.39435E-05	5.44098E-05	5.47352E-05	5.47216E-05
10	5.37805E-05	5.42514E-05	5.45919E-05	5.47614E-05	5.45983E-05
11	5.41030E-05	5.44683E-05	5.47081E-05	5.47558E-05	5.44886E-05
12	5.37762E-05	5.38078E-05	5.38637E-05	5.38536E-05	5.36953E-05
13	5.30544E-05	5.30234E-05	5.30555E-05	5.30649E-05	5.30054E-05
14	5.25611E-05	5.25726E-05	5.25881E-05	5.25991E-05	5.25728E-05
15	5.23607E-05	5.23851E-05	5.23828E-05	5.23971E-05	5.24109E-05
16	5.22900E-05	5.23142E-05	5.23038E-05	5.23044E-05	5.23063E-05
17	5.22404E-05	5.22498E-05	5.22443E-05	5.22513E-05	5.22572E-05
18	5.21983E-05	5.22268E-05	5.22197E-05	5.22121E-05	5.21973E-05
19	5.21685E-05	5.22226E-05	5.22189E-05	5.21982E-05	5.21588E-05
20	5.21433E-05	5.22108E-05	5.22227E-05	5.22193E-05	5.22023E-05
21	5.21191E-05	5.22051E-05	5.22301E-05	5.22337E-05	5.22137E-05
22	5.20906E-05	5.21820E-05	5.22166E-05	5.22396E-05	5.22486E-05
23	5.20892E-05	5.21931E-05	5.22171E-05	5.22140E-05	5.21868E-05
24	5.21143E-05	5.22224E-05	5.22455E-05	5.22500E-05	5.22402E-05
25	5.21738E-05	5.23105E-05	5.23331E-05	5.23250E-05	5.22943E-05
26	5.22058E-05	5.22827E-05	5.22791E-05	5.22617E-05	5.22346E-05
27	5.23123E-05	5.23553E-05	5.23332E-05	5.23031E-05	5.22664E-05
28	5.24966E-05	5.24435E-05	5.24014E-05	5.23961E-05	5.23929E-05
29	5.27318E-05	5.26819E-05	5.26987E-05	5.27412E-05	5.27626E-05
30	5.29809E-05	5.30246E-05	5.30153E-05	5.29605E-05	5.28308E-05
31	5.31569E-05	5.35935E-05	5.36767E-05	5.36149E-05	5.33888E-05
32	5.29694E-05	5.36440E-05	5.38462E-05	5.38502E-05	5.36336E-05
33	5.25255E-05	5.27904E-05	5.28542E-05	5.28392E-05	5.27384E-05
34	5.23122E-05	5.24315E-05	5.24840E-05	5.25127E-05	5.24975E-05
35	5.23110E-05	5.23211E-05	5.23271E-05	5.23276E-05	5.23042E-05
36	5.25981E-05	5.26370E-05	5.26223E-05	5.25719E-05	5.24699E-05

PENN. ELEC. REWARD

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.0869E-04 DIRECTION=300. DISTANCE= 2.8 KM DAY=120.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

QTR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	6.8658E-05 (200)	6.8129E-05 (199)	7.2602E-05 (254)	7.8181E-05 (254)	7.9388E-05 (254)
2	6.7388E-05 (113)	6.2921E-05 (164)	6.3899E-05 (164)	6.3026E-05 (164)	6.1973E-05 (167)
3	7.4403E-05 (208)	7.1031E-05 (349)	7.2010E-05 (349)	7.1386E-05 (263)	7.0145E-05 (263)
4	8.2762E-05 (208)	8.2034E-05 (156)	8.6957E-05 (156)	8.6841E-05 (306)	8.4045E-05 (306)
5	7.9313E-05 (208)	9.7069E-05 (56)	1.0201E-04 (56)	9.8484E-05 (56)	8.7701E-05 (56)
6	7.8567E-05 (189)	7.9447E-05 (39)	8.2779E-05 (332)	8.5815E-05 (332)	8.3016E-05 (332)
7	7.8824E-05 (189)	8.7070E-05 (26)	8.9541E-05 (26)	8.9321E-05 (308)	8.6833E-05 (308)
8	8.1238E-05 (58)	1.0335E-04 (57)	1.0364E-04 (57)	9.6697E-05 (57)	9.1699E-05 (7)
9	8.3640E-05 (183)	7.7636E-05 (9)	8.1607E-05 (9)	7.9849E-05 (9)	7.9665E-05 (124)
10	9.0275E-05 (111)	8.9047E-05 (62)	9.8069E-05 (62)	9.8446E-05 (62)	8.9947E-05 (62)
11	9.2037E-05 (96)	9.0716E-05 (94)	9.5000E-05 (94)	9.5900E-05 (96)	9.0393E-05 (96)
12	9.3088E-05 (103)	8.2879E-05 (79)	8.4608E-05 (275)	8.5603E-05 (275)	8.0310E-05 (275)
13	8.2391E-05 (103)	7.9623E-05 (67)	8.3860E-05 (67)	8.2030E-05 (67)	7.5112E-05 (67)
14	7.5754E-05 (117)	6.9554E-05 (185)	6.8514E-05 (303)	6.8711E-05 (303)	6.6221E-05 (303)
15	7.2290E-05 (219)	6.6780E-05 (219)	6.4363E-05 (220)	6.4849E-05 (86)	6.7046E-05 (86)
16	7.2078E-05 (219)	6.8907E-05 (186)	6.5541E-05 (186)	6.5340E-05 (20)	6.9491E-05 (19)
17	7.2828E-05 (180)	7.0479E-05 (186)	6.6721E-05 (186)	6.2422E-05 (186)	6.3378E-05 (218)
18	7.6048E-05 (180)	7.1291E-05 (180)	6.6558E-05 (180)	6.2256E-05 (180)	6.0973E-05 (210)
19	7.1864E-05 (180)	6.7905E-05 (180)	6.3728E-05 (180)	6.4320E-05 (218)	6.5044E-05 (218)
20	6.4776E-05 (180)	6.5185E-05 (181)	6.2637E-05 (179)	6.1306E-05 (179)	6.0319E-05 (160)
21	6.4228E-05 (181)	6.8610E-05 (181)	6.8174E-05 (218)	6.7859E-05 (218)	6.5317E-05 (218)
22	6.1459E-05 (181)	6.7253E-05 (181)	6.5979E-05 (181)	6.7460E-05 (159)	6.8726E-05 (159)
23	5.8221E-05 (181)	6.4692E-05 (181)	6.4664E-05 (267)	6.5178E-05 (267)	6.2998E-05 (267)
24	5.9212E-05 (179)	6.5664E-05 (267)	6.8728E-05 (267)	6.8342E-05 (267)	6.4995E-05 (267)
25	6.2295E-05 (179)	8.3908E-05 (267)	9.1117E-05 (267)	9.0343E-05 (267)	8.2882E-05 (267)
26	6.2414E-05 (179)	6.5177E-05 (179)	6.5594E-05 (267)	6.5186E-05 (267)	6.2578E-05 (267)
27	6.7626E-05 (187)	6.9648E-05 (73)	7.1794E-05 (73)	7.0292E-05 (73)	6.5859E-05 (73)
28	8.4717E-05 (187)	7.0652E-05 (187)	6.7614E-05 (73)	6.5055E-05 (73)	6.3145E-05 (119)
29	9.5349E-05 (187)	8.1259E-05 (187)	8.8565E-05 (177)	1.0168E-04 (177)	1.0496E-04 (177)
30	9.8593E-05 (120)	1.0676E-04 (120)	1.0869E-04 (120)	1.0354E-04 (120)	9.1256E-05 (120)
31	8.7495E-05 (194)	1.0377E-04 (261)	1.0846E-04 (261)	1.0330E-04 (261)	9.0468E-05 (261)
32	8.5385E-05 (77)	9.6547E-05 (77)	9.4396E-05 (77)	9.5642E-05 (137)	8.8612E-05 (137)
33	7.0599E-05 (112)	7.3209E-05 (6)	7.6854E-05 (6)	7.5633E-05 (6)	7.0324E-05 (6)
34	6.8859E-05 (112)	6.4456E-05 (112)	6.3122E-05 (325)	6.3112E-05 (311)	6.2149E-05 (311)
35	7.5335E-05 (200)	6.7032E-05 (200)	6.4135E-05 (200)	6.5248E-05 (201)	6.4389E-05 (201)
36	8.8221E-05 (200)	8.9257E-05 (200)	9.0419E-05 (200)	8.7664E-05 (200)	7.9896E-05 (200)

PENN. ELEC. SEWARD

NOX--SO2

YEARLY MAXIMUM 3-HOUR CONC= 2.1056E-04 DIRECTION= 60. DISTANCE= 2.8 KM DAY= 19. HOUR= 300.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.4054E-04 (195)	1.2238E-04 (204)	1.2695E-04 (254)	1.5162E-04 (254)	1.5306E-04 (254)
2	1.4275E-04 (238)	1.1217E-04 (113)	1.0964E-04 (113)	1.1505E-04 (83)	1.1771E-04 (205)
3	1.7063E-04 (238)	1.3526E-04 (191)	1.4773E-04 (312)	1.5811E-04 (312)	1.5511E-04 (241)
4	1.6213E-04 (205)	1.4584E-04 (156)	1.5748E-04 (156)	1.5237E-04 (156)	1.5497E-04 (114)
5	1.9470E-04 (237)	1.5396E-04 (3)	1.9278E-04 (3)	2.0531E-04 (3)	1.8697E-04 (3)
6	1.8616E-04 (110)	1.9491E-04 (39)	2.1056E-04 (39)	1.9799E-04 (39)	1.6688E-04 (39)
7	1.7717E-04 (154)	1.4870E-04 (26)	1.6440E-04 (234)	1.7446E-04 (309)	1.7702E-04 (42)
8	1.6271E-04 (58)	1.5766E-04 (93)	1.5374E-04 (19)	1.5749E-04 (234)	1.5083E-04 (234)
9	1.6260E-04 (183)	1.4419E-04 (9)	1.5499E-04 (9)	1.6089E-04 (245)	1.6311E-04 (42)
10	1.6534E-04 (91)	1.5736E-04 (93)	1.5617E-04 (94)	1.5758E-04 (256)	1.5023E-04 (229)
11	1.8052E-04 (97)	1.5594E-04 (93)	1.7256E-04 (81)	1.8191E-04 (81)	1.6768E-04 (81)
12	1.6231E-04 (95)	1.4523E-04 (79)	1.5630E-04 (126)	1.4947E-04 (126)	1.4144E-04 (98)
13	1.6430E-04 (303)	1.3457E-04 (67)	1.4630E-04 (67)	1.4120E-04 (284)	1.4691E-04 (206)
14	1.3568E-04 (117)	1.3771E-04 (185)	1.2526E-04 (185)	1.3495E-04 (302)	1.3023E-04 (302)
15	1.5557E-04 (219)	1.3132E-04 (210)	1.2737E-04 (210)	1.1332E-04 (210)	1.2133E-04 (20)
16	1.4493E-04 (220)	1.2255E-04 (186)	1.1141E-04 (186)	1.2248E-04 (20)	1.3234E-04 (20)
17	1.4588E-04 (180)	1.2683E-04 (186)	1.0958E-04 (186)	1.1411E-04 (218)	1.1635E-04 (218)
18	1.3508E-04 (180)	1.1814E-04 (186)	1.1193E-04 (210)	1.0718E-04 (210)	9.8087E-05 (92)
19	1.3579E-04 (180)	1.1440E-04 (180)	9.9315E-05 (182)	1.1162E-04 (218)	1.1585E-04 (218)
20	1.3060E-04 (219)	1.1751E-04 (181)	1.0242E-04 (181)	9.5688E-05 (179)	1.0455E-04 (219)
21	1.4763E-04 (218)	1.3670E-04 (218)	1.2396E-04 (218)	1.0993E-04 (218)	1.0468E-04 (73)
22	1.0189E-04 (218)	9.6483E-05 (181)	1.0140E-04 (128)	9.9143E-05 (128)	1.1106E-04 (217)
23	8.3700E-05 (196)	1.0749E-04 (181)	1.1536E-04 (267)	1.2214E-04 (267)	1.1497E-04 (218)
24	9.3580E-05 (130)	1.0774E-04 (267)	1.2306E-04 (267)	1.2326E-04 (267)	1.1408E-04 (266)
25	1.0563E-04 (130)	1.3952E-04 (267)	1.6066E-04 (267)	1.5912E-04 (267)	1.4159E-04 (267)
26	1.1550E-04 (130)	1.1615E-04 (179)	1.2305E-04 (267)	1.2052E-04 (267)	1.0722E-04 (267)
27	1.3928E-04 (187)	1.3931E-04 (73)	1.4697E-04 (73)	1.4092E-04 (73)	1.2781E-04 (87)
28	1.7457E-04 (187)	1.4663E-04 (73)	1.4420E-04 (73)	1.2951E-04 (73)	1.1294E-04 (119)
29	1.6333E-04 (187)	1.2456E-04 (188)	1.2933E-04 (177)	1.4563E-04 (177)	1.4928E-04 (177)
30	1.6485E-04 (120)	1.5064E-04 (120)	1.6403E-04 (120)	1.5899E-04 (120)	1.4281E-04 (137)
31	1.7101E-04 (258)	1.6616E-04 (243)	1.9629E-04 (243)	2.0199E-04 (243)	1.8187E-04 (243)
32	1.7913E-04 (258)	1.5872E-04 (244)	1.6657E-04 (261)	1.5957E-04 (261)	1.4353E-04 (258)
33	1.4192E-04 (112)	1.4261E-04 (6)	1.5257E-04 (6)	1.4401E-04 (6)	1.2108E-04 (6)
34	1.2294E-04 (112)	1.3025E-04 (325)	1.4199E-04 (325)	1.4089E-04 (311)	1.3320E-04 (311)
35	1.4602E-04 (200)	1.2120E-04 (200)	1.1721E-04 (200)	1.0861E-04 (200)	1.0723E-04 (201)
36	2.0171E-04 (201)	1.4633E-04 (200)	1.6898E-04 (200)	1.6748E-04 (200)	1.4465E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
120	1.0869E-04	30	2.75
261	1.0846E-04	31	2.75
177	1.0496E-04	29	5.21
57	1.0364E-04	8	2.75
56	1.0201E-04	5	2.75
62	9.8446E-05	10	3.65
77	9.6547E-05	32	2.07
96	9.5900E-05	11	3.65
137	9.5642E-05	32	3.65
335	9.5485E-05	8	2.75
147	9.5349E-05	29	1.17
94	9.5000E-05	11	2.75
14	9.4433E-05	8	3.65
7	9.3993E-05	8	3.65
37	9.3720E-05	8	3.65
26	9.3447E-05	8	2.75
103	9.3088E-05	12	1.17
188	9.1727E-05	29	1.17
267	9.1117E-05	25	2.75
200	9.0419E-05	36	2.75

PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

1975 DATA MAXIMUM LOAD SEWARD

STACK # 1--SEWARD STACK 1 - MAXIMUM LOAD COAL NOX
STACK # 2--SEWARD STACK 2 - MAXIMUM LOAD COAL NOX

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	79.00	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	125.00	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 1 JDAY= 7
ISTAB= 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4
AWS= 7.6 7.6 9.4 8.5 9.4 8.5 8.5 8.1 9.4 8.9 8.9 9.4 7.2 4.0 4.0 4.5 3.6 5.4 6.3 8.1 8.1 6.3 6.3 6.3
TEMP= 273. 273. 273. 273. 273. 273. 273. 273. 274. 274. 275. 276. 277. 277. 277. 277. 277. 276. 276. 277. 277. 277. 277. 277.
AFV= 59. 71. 80. 83. 82. 84. 85. 83. 77. 82. 83. 89. 86. 82. 82. 71. 38. 5. 2. 18. 23. 26. 6. 357.
AFVR= 59. 71. 80. 83. 82. 84. 85. 83. 77. 82. 83. 89. 86. 82. 82. 71. 38. 5. 2. 18. 23. 26. 6. 357.
HLH1= 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800.
1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800.

JYR=75 IHO= 1 JDAY= 14
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 1 2 3 3 3 3 3 3 3
AWS= 7.6 8.9 8.1 7.6 7.6 8.1 8.9 10.3 8.9 6.7 6.7 8.5 8.5 8.5 8.1 8.1 7.6 8.1 9.4 9.4 8.5 8.1 8.9 9.4
TEMP= 260. 260. 259. 259. 259. 259. 258. 258. 258. 259. 259. 259. 259. 260. 260. 260. 260. 260. 260. 259. 260. 260. 260. 260.
AFV= 101. 90. 88. 79. 84. 81. 75. 76. 71. 77. 80. 81. 87. 84. 81. 85. 81. 85. 81. 85. 84. 80. 75. 73. 72. 70.
AFVR= 101. 90. 88. 79. 84. 81. 75. 76. 71. 77. 80. 81. 87. 84. 81. 85. 81. 85. 84. 80. 75. 73. 72. 70.
HLH1= 959. 959. 959. 959. 959. 959. 1013. 1067. 1121. 1175. 1228. 1282.
1336. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390.

JYR=75 IHO= 1 JDAY= 26
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 3 3 3 3
AWS= 11.7 11.6 12.1 13.0 13.9 13.9 14.8 16.1 14.8 15.2 15.6 15.6 15.2 14.8 15.2 16.5 14.3 16.1 13.9 13.0 13.9 13.0 12.5 11.6
TEMP= 271. 271. 271. 271. 270. 270. 270. 269. 269. 269. 269. 269. 269. 269. 268. 267. 267. 267. 267. 267. 267. 266. 266. 266.
AFV= 75. 72. 71. 65. 82. 77. 76. 78. 73. 75. 80. 78. 86. 85. 88. 88. 91. 92. 88. 88. 86. 88. 87. 87.
AFVR= 75. 72. 71. 65. 82. 77. 76. 78. 73. 75. 80. 78. 86. 85. 88. 88. 91. 92. 88. 88. 86. 88. 87. 87.
HLH1= 566. 566. 566. 566. 566. 566. 598. 629. 661. 693. 725. 756.
798. 820. 820. 820. 820. 820. 820. 820. 820. 820. 820. 820.

JYR=75 IHO= 2 JDAY= 17
ISTAB= 3 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 8.1 8.5 8.5 9.8 11.2 11.2 10.3 9.4 10.3 10.7 10.7 10.7 10.3 8.5 8.1 7.6 6.7 7.2 6.7 6.3 6.7 6.7 7.6 7.2
TEMP= 272. 272. 274. 274. 274. 274. 273. 273. 272. 271. 271. 271. 271. 271. 271. 271. 271. 271. 271. 271. 270. 270. 270. 270.
AFV= 68. 67. 67. 73. 76. 80. 85. 92. 88. 88. 83. 82. 86. 87. 85. 88. 92. 91. 93. 92. 86. 85. 91. 97.
AFVR= 68. 67. 67. 73. 76. 80. 85. 92. 88. 88. 83. 82. 86. 87. 85. 88. 92. 91. 93. 92. 86. 85. 91. 97.
HLH1= 1100. 1100. 1100. 1100. 1100. 1100. 1094. 1088. 1081. 1075. 1069. 1063.
1056. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050.

```
JYR=75 IHO= 2 JDAY= 56
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS= 10.7  8.5  7.2  7.2  8.9 10.7 10.7  9.8 12.5 13.4 15.2 15.2 13.0 13.4 16.5 16.1 16.5 16.5 18.3 18.3 16.1 17.9 20.1 19.2
TEMP= 271. 271. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 271. 271. 271. 271. 271. 271. 272. 271. 271. 272. 272. 273.
AFV=  93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
AFVR= 93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
HLHI= 1700. 1700. 1700. 1700. 1700. 1700. 1609. 1518. 1426. 1335. 1244. 1153.
      1061.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.

JYR=75 IHO= 2 JDAY= 57
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    2    2    3    2    3    3    3    3    3    3    3    3    3
AWS= 19.2 17.4 17.9 16.1 15.2 15.2 13.9 13.9 14.3 16.1 16.5 16.1 15.6 17.0 16.5 15.6 14.1 11.9 13.0 12.5 13.4 13.4 12.1 11.6
TEMP= 272. 271. 271. 271. 271. 271. 270. 270. 270. 271. 272. 273. 274. 274. 275. 275. 274. 274. 274. 271. 273. 273. 272. 272.
AFV=  82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
AFVR= 82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
HLHI= 2000. 2000. 2000. 2000. 2000. 2000. 1968. 1935. 1903. 1870. 1838. 1805.
      1771. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740.

JYR=75 IHO= 3 JDAY= 67
ISTAR=  3    3    3    3    3    3    3    3    3    2    1    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS=  9.8  9.4  8.5  8.9  8.9  9.8 10.3  9.4  9.4  9.8 10.3 10.7 11.6 11.6 12.1 10.3 10.3 11.2 12.1 10.7 12.5 12.1 10.3  9.8
TEMP= 261. 263. 262. 262. 263. 262. 262. 262. 262. 263. 264. 264. 265. 265. 264. 264. 265. 264. 264. 264. 264. 263. 263. 263.
AFV=  118. 110. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
AFVR= 118. 110. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
HLHI= 1050. 1050. 1050. 1050. 1050. 1050. 1174. 1298. 1421. 1545. 1669. 1791.
      1916. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040.

JYR=75 IHO= 3 JDAY= 77
ISTAR=  4    3    3    3    3    3    3    3    2    1    1    1    1    1    2    3    3    3    3    3    3    3    3    3
AWS=  9.4 10.3  8.9 11.2 13.9 12.5 15.2 14.3 12.5 13.4 15.6 13.0 12.1 13.0 11.4 11.2 14.8 14.3 17.0 18.3 13.9 13.0 13.0 13.4
TEMP= 277. 277. 276. 276. 275. 275. 275. 275. 275. 276. 277. 279. 279. 280. 280. 281. 280. 278. 277. 276. 276. 275. 275. 276.
AFV=  312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
AFVR= 312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
HLHI=  100.  100.  100.  100.  100.  100.  250.  400.  550.  700.  850. 1000.
      1150. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.

JYR=75 IHO= 4 JDAY= 94
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS= 15.6 18.0 17.0 17.9 17.9 17.0 15.6 14.8 15.6 11.2 13.0 10.3 11.6 11.2 13.0 12.1 12.1 11.4 11.2 11.2 10.7 10.7 11.2 11.2
TEMP= 266. 266. 265. 265. 265. 265. 264. 265. 265. 266. 266. 268. 269. 270. 270. 269. 268. 266. 266. 266. 266. 265. 265.
AFV=  115. 115. 110. 104. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
AFVR= 115. 115. 110. 104. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
HLHI= 1000. 1000. 1000. 1000. 1000. 1000. 1106. 1213. 1319. 1425. 1531. 1638.
      1744. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.

JYR=75 IHO= 4 JDAY= 96
ISTAR=  3    3    3    3    3    3    3    3    2    1    1    1    1    1    1    1    2    2    3    3    3    3    3    3
AWS=  6.1  8.1  8.1  7.2  8.1  8.1  8.5  9.4  9.8  9.4  9.4  9.4  9.8 11.2 10.3 11.2 11.6 10.7  8.9  9.8  9.8  8.9  7.6  6.1
TEMP= 266. 267. 267. 266. 266. 267. 267. 267. 268. 269. 270. 271. 271. 272. 272. 272. 271. 271. 270. 269. 268. 268. 267. 268.
AFV=  120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 110. 120.
AFVR= 120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 110. 120.
HLHI=  336.  336.  336.  336.  336.  336.  444.  552.  660.  768.  876.  984.
      1092. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200.
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JYR=75 IMO= 4 JDAY=103
ISTAB=  4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  1.6  1.1  3.1  2.7  2.2  1.8  1.8  1.3  2.7  3.6  4.5  5.4  6.3  6.3  6.3  6.7  6.7  5.4  4.9  4.0  4.0  3.6  3.6  3.6
TEMP= 270. 270. 270. 270. 270. 270. 271. 271. 272. 273. 275. 276. 277. 277. 277. 277. 277. 276. 275. 274. 274. 273. 272. 272.
AFV=  190. 126. 122. 106.  91.  91.  77.  77. 101. 126. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
AFVR= 190. 126. 122. 106.  91.  91.  77.  77. 101. 126. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
HLH1=  770.  770.  770.  770.  770.  770. 1029. 1279. 1529. 1779. 2029. 2280.
      2530. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780.


JYR=75 IMO= 4 JDAY=120
ISTAB=  3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    1    2    3    3    3    3    3    3
AWS=  9.4  9.8 10.3  9.8 10.7  9.8 10.3 11.2 11.2 10.7 10.3 11.2 11.2  9.4 11.6 11.6 11.2 10.7 10.3  9.4  9.8 11.2 12.1 12.5
TEMP= 280. 280. 281. 281. 280. 280. 281. 281. 282. 284. 284. 285. 284. 285. 284. 284. 284. 283. 282. 282. 282. 282. 282. 282.
AFV=  310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
AFVR= 310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
HLH1=  600.  600.  600.  600.  600.  600.  600.  720.  840.  960. 1060. 1170.
      1280. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.


JYR=75 IMO= 5 JDAY=137
ISTAB=  4    4    4    4    4    4    3    3    3    3    2    2    2    3    3    3    3    3    3    3    3    3    3    3
AWS=  6.3  6.7 10.3  8.5  6.3  5.8  6.7  7.2  5.8  6.3  6.7  7.6  8.1  7.6  8.1  8.1  9.8  8.9  8.5  8.1  8.5  9.4  9.8  9.4
TEMP= 285. 285. 284. 284. 285. 284. 285. 286. 287. 289. 290. 291. 291. 291. 291. 290. 289. 289. 288. 287. 287. 286. 286. 286.
AFV=  275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
AFVR= 275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
HLH1=  100.  100.  100.  100.  100.  100.  234.  368.  501.  635.  769.  903.
      1036. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170.


JYR=75 IMO= 6 JDAY=177
ISTAB=  4    3    3    4    4    4    4    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    3    3
AWS=  5.8  4.9  4.5  4.0  4.9  5.4  5.4  6.7  5.8  5.4  4.9  5.8  6.7  5.4  5.4  5.8  5.8  4.9  5.8  6.7  7.2  7.6  7.2  4.9
TEMP= 291. 291. 291. 291. 291. 291. 290. 290. 290. 291. 290. 290. 290. 290. 291. 292. 291. 290. 289. 290. 289. 289. 289. 289.
AFV=  290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
AFVR= 290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
HLH1=  100.  100.  100.  100.  100.  100.  189.  278.  366.  455.  544.  633.
       721.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.


JYR=75 IMO= 7 JDAY=187
ISTAB=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  3.6  3.6  3.1  3.1  3.1  3.1  4.0  4.5  2.7  4.0  4.5  4.5  4.0  4.5  4.0  3.6  4.0  4.5  4.9  5.4  6.3  5.4  5.4  4.5
TEMP= 293. 292. 292. 291. 291. 291. 291. 292. 294. 295. 296. 297. 298. 298. 299. 299. 299. 297. 296. 295. 296. 294. 293. 292.
AFV=  300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
AFVR= 300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
HLH1=  389.  389.  389.  389.  389.  389.  571.  754.  937. 1119. 1302. 1485.
      1667. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.


JYR=75 IMO= 7 JDAY=188
ISTAB=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  4.5  3.6  4.0  2.7  2.7  4.0  5.8  4.0  3.6  2.7  2.7  4.5  5.8  4.3  4.9  5.8  4.9  4.9  4.5  4.0  3.1  4.0  4.9  4.0
TEMP= 292. 291. 291. 290. 290. 289. 290. 291. 292. 294. 296. 296. 296. 296. 296. 295. 294. 294. 294. 293. 292. 291. 291. 289.
AFV=  310. 302. 291. 306. 302. 314. 328. 328. 291. 302. 316. 300. 300. 291. 292. 310. 302. 289. 290. 296. 298. 288. 293. 300.
AFVR= 310. 302. 291. 306. 302. 314. 328. 328. 291. 302. 316. 300. 300. 291. 292. 310. 302. 289. 290. 296. 298. 288. 293. 300.
HLH1=  450.  450.  450.  450.  450.  450.  556.  663.  769.  875.  981. 1088.
      1194. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.
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JYR=75 IMO= 7 JDAY=200
ISTAB=  4    4    4    4    3    3    3    3    2    1    1    1    2    2    2    3    3    3    3    3    4    4    4
ANS=  6.7  8.9  8.9  8.9  9.8 10.3 10.3  9.4  9.4  9.4  8.1  8.9  8.1  8.9  9.4  8.9  8.9  7.6  8.9  6.7  6.7  8.1  8.9  9.8
TEMP= 292. 292. 292. 292. 292. 292. 293. 294. 294. 294. 296. 297. 297. 299. 299. 299. 299. 298. 297. 297. 297. 295. 296. 296.
AFV=  350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.   0.
AFVR= 350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.   0.
HLHI= 1100. 1100. 1100. 1100. 1100. 1100. 1154. 1208. 1261. 1315. 1369. 1423.
      1476. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530.


JYR=75 IMO= 9 JDAY=261
ISTAB=  3    4    4    4    3    4    4    4    3    3    3    3    3    3    3    3    3    3    3    3    3    3    4
ANS=  8.5  9.8 10.7  9.8 10.7 11.2 12.5 12.5 12.1 11.6 14.3 14.3 15.2 13.9 13.9 13.9 13.4 12.5 11.6 12.1 11.2 11.6 10.7  9.4
TEMP= 287. 286. 287. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 287. 287. 287. 287. 287. 287. 287. 287. 287.
AFV=  315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
AFVR= 315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
HLHI= 600.  600.  600.  600.  600.  600.  571.  543.  514.  485.  456.  428.
      399.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.


JYR=75 IMO= 9 JDAY=267
ISTAB=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
ANS=  9.4 10.7 11.6 13.4  9.8  8.1  8.9 10.7 10.3 10.3 10.7  9.4  8.9  8.5  9.4 10.7 10.7  9.8 10.7  9.8 11.2 10.3 10.3 10.3
TEMP= 282. 282. 282. 282. 281. 282. 281. 282. 282. 282. 282. 282. 282. 283. 282. 282. 282. 282. 282. 283. 283. 283. 284. 283.
AFV=  240. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
AFVR= 240. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
HLHI= 1400. 1400. 1400. 1400. 1400. 1400. 1400. 1245. 1090.  935.  780.  625.  470.
       315.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.


JYR=75 IMO=12 JDAY=335
ISTAB=  3    3    3    3    2    3    3    3    3    3    2    2    2    2    2    3    3    3    3    3    4    4    4    4
ANS= 14.3 14.8 12.5 12.5 15.2 14.8 12.1 12.5 13.9 13.9 15.2 13.9 11.6 13.4 10.7  9.8  9.4  7.6  7.6  7.6  8.9  6.7  6.8  4.9
TEMP= 279. 276. 274. 272. 271. 270. 269. 269. 269. 268. 268. 269. 269. 269. 270. 269. 268. 268. 283. 283. 283. 283. 283. 283.
AFV=   87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  87.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
AFVR=  87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
HLHI= 1800. 1800. 1800. 1800. 1800. 1800. 1775. 1750. 1725. 1700. 1675. 1650.
      1625. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600.

YEAR BASED ON  20. DAYS
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PENN. ELEC. SEWARD

NOX--SO2

MAXIMUM MEAN CONC= 6.9065E-05 DIRECTION= 8 DISTANCE= 2.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1		5.29079E-05	5.24174E-05	5.22586E-05	5.21537E-05	5.20773E-05
2		5.21972E-05	5.20697E-05	5.20390E-05	5.20215E-05	5.20102E-05
3		5.20301E-05	5.20107E-05	5.20193E-05	5.20563E-05	5.21267E-05
4		5.20400E-05	5.20426E-05	5.20265E-05	5.20130E-05	5.20040E-05
5		5.30619E-05	5.50482E-05	5.53497E-05	5.50927E-05	5.43623E-05
6		5.27155E-05	5.35631E-05	5.37167E-05	5.36114E-05	5.32604E-05
7		5.52002E-05	5.86574E-05	5.94039E-05	5.90477E-05	5.76080E-05
8		5.83884E-05	6.66371E-05	6.90652E-05	6.87859E-05	6.57024E-05
9		5.46872E-05	5.53343E-05	5.56508E-05	5.55698E-05	5.49448E-05
10		5.56905E-05	5.75053E-05	5.79602E-05	5.75712E-05	5.63407E-05
11		5.73204E-05	5.88207E-05	5.92810E-05	5.88344E-05	5.74107E-05
12		5.61193E-05	5.57553E-05	5.56764E-05	5.53803E-05	5.47383E-05
13		5.41295E-05	5.32274E-05	5.28978E-05	5.26380E-05	5.23962E-05
14		5.27411E-05	5.23245E-05	5.21954E-05	5.21138E-05	5.20559E-05
15		5.21605E-05	5.20616E-05	5.20347E-05	5.20189E-05	5.20085E-05
16		5.20205E-05	5.20066E-05	5.20034E-05	5.20017E-05	5.20007E-05
17		5.20015E-05	5.20004E-05	5.20002E-05	5.20001E-05	5.20000E-05
18		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
19		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
20		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
21		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
22		5.20032E-05	5.20074E-05	5.20056E-05	5.20030E-05	5.20010E-05
23		5.20947E-05	5.25489E-05	5.27213E-05	5.27438E-05	5.26164E-05
24		5.21729E-05	5.29162E-05	5.29868E-05	5.29567E-05	5.27572E-05
25		5.24660E-05	5.39724E-05	5.43814E-05	5.43147E-05	5.38545E-05
26		5.25390E-05	5.28987E-05	5.29787E-05	5.29072E-05	5.27094E-05
27		5.34653E-05	5.28588E-05	5.26341E-05	5.24561E-05	5.22949E-05
28		5.56507E-05	5.41224E-05	5.35786E-05	5.32232E-05	5.29051E-05
29		5.85189E-05	5.72337E-05	5.73512E-05	5.74856E-05	5.70523E-05
30		5.96893E-05	5.83437E-05	5.77068E-05	5.68588E-05	5.56199E-05
31		5.86922E-05	5.89646E-05	5.84968E-05	5.75112E-05	5.60449E-05
32		5.64636E-05	5.86743E-05	5.90343E-05	5.84808E-05	5.70541E-05
33		5.31203E-05	5.25175E-05	5.23149E-05	5.21822E-05	5.20915E-05
34		5.25807E-05	5.25288E-05	5.25897E-05	5.25899E-05	5.24929E-05
35		5.33013E-05	5.28295E-05	5.26665E-05	5.25168E-05	5.23696E-05
36		5.39896E-05	5.40573E-05	5.41130E-05	5.39520E-05	5.35194E-05

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.2081E-04 DIRECTION= 80. DISTANCE= 2.1 KM DAY= 57.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.0156E-05 (200)	6.0348E-05 (200)	5.7172E-05 (200)	5.5073E-05 (200)	5.3546E-05 (200)
2	5.5944E-05 (200)	5.3393E-05 (200)	5.2778E-05 (200)	5.2426E-05 (200)	5.2200E-05 (200)
3	5.2606E-05 (200)	5.2181E-05 (200)	5.2293E-05 (7)	5.3079E-05 (7)	5.4514E-05 (7)
4	5.2743E-05 (56)	5.2838E-05 (56)	5.2523E-05 (56)	5.2254E-05 (56)	5.2076E-05 (56)
5	7.2929E-05 (56)	1.1275E-04 (56)	1.1086E-04 (56)	1.1379E-04 (56)	9.9225E-05 (56)
6	5.8290E-05 (56)	6.8559E-05 (56)	7.0479E-05 (56)	6.9565E-05 (56)	6.5912E-05 (56)
7	7.4040E-05 (57)	9.4610E-05 (26)	9.7220E-05 (26)	9.2728E-05 (14)	8.8459E-05 (14)
8	9.5197E-05 (335)	1.2081E-04 (57)	1.2073E-04 (57)	1.1349E-04 (335)	1.0010E-04 (37)
9	7.1860E-05 (335)	6.9101E-05 (335)	7.5807E-05 (37)	8.2155E-05 (37)	8.1550E-05 (37)
10	7.7705E-05 (96)	9.9407E-05 (62)	1.1027E-04 (62)	1.1025E-04 (62)	9.9264E-05 (62)
11	9.7013E-05 (96)	9.6173E-05 (94)	1.0087E-04 (96)	1.0167E-04 (96)	9.5080E-05 (96)
12	9.8313E-05 (103)	7.7986E-05 (103)	7.6673E-05 (94)	7.5642E-05 (94)	7.1165E-05 (96)
13	8.6213E-05 (103)	6.9520E-05 (103)	6.3301E-05 (103)	5.9019E-05 (103)	5.5728E-05 (94)
14	6.5594E-05 (103)	5.8082E-05 (103)	5.5686E-05 (103)	5.4161E-05 (103)	5.3064E-05 (103)
15	5.5101E-05 (103)	5.3206E-05 (103)	5.2682E-05 (103)	5.2373E-05 (103)	5.2168E-05 (103)
16	5.2404E-05 (103)	5.2131E-05 (103)	5.2067E-05 (103)	5.2033E-05 (103)	5.2013E-05 (103)
17	5.2030E-05 (103)	5.2008E-05 (103)	5.2003E-05 (103)	5.2002E-05 (103)	5.2000E-05 (103)
18	5.2001E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)
19	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)
20	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)
21	5.2000E-05 (267)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)
22	5.2064E-05 (267)	5.2149E-05 (267)	5.2112E-05 (267)	5.2061E-05 (267)	5.2020E-05 (267)
23	5.3889E-05 (267)	6.2977E-05 (267)	6.6426E-05 (267)	6.6877E-05 (267)	6.4329E-05 (267)
24	5.5353E-05 (267)	6.8295E-05 (267)	7.1723E-05 (267)	7.1128E-05 (267)	6.7141E-05 (267)
25	6.0104E-05 (267)	9.1008E-05 (267)	9.9392E-05 (267)	9.8172E-05 (267)	8.9038E-05 (267)
26	5.7150E-05 (187)	6.6698E-05 (267)	6.9650E-05 (267)	6.9052E-05 (267)	6.5654E-05 (267)
27	6.9123E-05 (187)	6.0492E-05 (187)	5.7329E-05 (187)	5.6119E-05 (267)	5.5287E-05 (267)
28	8.7930E-05 (187)	7.2293E-05 (187)	6.5396E-05 (187)	6.0488E-05 (177)	6.1340E-05 (177)
29	9.9714E-05 (187)	8.3978E-05 (187)	9.9047E-05 (177)	1.1504E-04 (177)	1.1838E-04 (177)
30	1.0465E-04 (120)	1.1419E-04 (120)	1.1603E-04 (120)	1.0990E-04 (120)	9.5890E-05 (120)
31	8.1084E-05 (120)	1.1084E-04 (261)	1.1566E-04 (261)	1.0953E-04 (261)	9.4959E-05 (261)
32	9.4190E-05 (77)	1.0790E-04 (77)	1.0492E-04 (77)	1.0460E-04 (137)	9.5820E-05 (137)
33	6.5278E-05 (77)	5.7738E-05 (77)	5.5442E-05 (77)	5.4010E-05 (77)	5.3056E-05 (77)
34	5.9629E-05 (200)	6.1211E-05 (200)	6.3042E-05 (200)	6.3383E-05 (200)	6.1649E-05 (200)
35	7.7500E-05 (200)	6.8441E-05 (200)	6.5256E-05 (200)	6.2298E-05 (200)	5.8976E-05 (200)
36	9.1750E-05 (200)	9.3136E-05 (200)	9.4256E-05 (200)	9.1037E-05 (200)	8.2387E-05 (200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.9694E-04 DIRECTION= 0. DISTANCE= 1.2 KM DAY=200. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.2407E-04 (200)	8.5252E-05 (200)	7.2561E-05 (200)	6.4284E-05 (200)	5.8210E-05 (200)
2	7.8029E-05 (200)	6.1398E-05 (200)	5.7373E-05 (200)	5.5023E-05 (200)	5.3471E-05 (200)
3	5.6767E-05 (200)	5.3432E-05 (200)	5.4344E-05 (7)	6.0634E-05 (7)	7.2115E-05 (7)
4	5.4080E-05 (56)	5.3668E-05 (56)	5.2946E-05 (56)	5.2468E-05 (56)	5.2144E-05 (56)
5	1.1006E-04 (56)	1.7246E-04 (56)	1.7277E-04 (56)	1.6574E-04 (56)	1.4205E-04 (56)
6	7.4716E-05 (56)	9.3332E-05 (56)	9.3074E-05 (26)	9.0576E-05 (56)	8.6099E-05 (56)
7	1.2876E-04 (57)	1.7051E-04 (57)	1.7219E-04 (57)	1.6570E-04 (26)	1.4855E-04 (14)
8	1.6508E-04 (335)	1.727BE-04 (57)	1.7513E-04 (335)	1.6825E-04 (7)	1.5648E-04 (335)
9	1.3891E-04 (335)	1.2961E-04 (26)	1.4638E-04 (56)	1.6034E-04 (56)	1.5402E-04 (37)
10	1.4812E-04 (62)	1.6684E-04 (94)	1.6927E-04 (94)	1.6340E-04 (62)	1.4724E-04 (62)
11	1.7452E-04 (96)	1.6935E-04 (94)	1.6778E-04 (94)	1.6528E-04 (94)	1.5757E-04 (96)
12	1.7102E-04 (103)	1.2113E-04 (103)	1.3146E-04 (94)	1.3173E-04 (96)	1.1817E-04 (96)
13	1.4486E-04 (103)	9.8456E-05 (103)	9.1229E-05 (94)	8.9885E-05 (94)	8.1688E-05 (94)
14	9.9623E-05 (103)	7.3107E-05 (103)	6.4941E-05 (103)	5.972BE-05 (103)	5.5918E-05 (103)
15	6.5809E-05 (103)	5.7554E-05 (103)	5.5223E-05 (103)	5.3815E-05 (103)	5.2851E-05 (103)
16	5.4214E-05 (103)	5.2755E-05 (103)	5.2400E-05 (103)	5.2204E-05 (103)	5.2084E-05 (103)
17	5.2191E-05 (103)	5.2051E-05 (103)	5.2024E-05 (103)	5.2011E-05 (103)	5.2004E-05 (103)
18	5.2008E-05 (103)	5.2002E-05 (103)	5.2001E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)
19	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)
20	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)
21	5.2000E-05 (267)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)
22	5.2332E-05 (267)	5.2682E-05 (267)	5.2565E-05 (267)	5.2326E-05 (267)	5.2110E-05 (267)
23	6.1660E-05 (267)	1.0174E-04 (267)	1.2446E-04 (267)	1.3137E-04 (267)	1.2066E-04 (267)
24	6.3496E-05 (267)	1.1610E-04 (267)	1.3269E-04 (267)	1.3226E-04 (267)	1.1636E-04 (267)
25	7.1296E-05 (267)	1.5243E-04 (267)	1.7520E-04 (267)	1.7275E-04 (267)	1.5228E-04 (267)
26	8.6529E-05 (187)	1.3394E-04 (267)	1.5014E-04 (267)	1.4664E-04 (267)	1.2826E-04 (267)
27	1.4761E-04 (187)	1.0109E-04 (187)	8.6049E-05 (267)	8.4660E-05 (267)	7.8204E-05 (267)
28	1.8626E-04 (187)	1.2352E-04 (187)	9.8709E-05 (187)	1.1142E-04 (177)	1.2236E-04 (177)
29	1.7424E-04 (187)	1.3133E-04 (188)	1.5078E-04 (177)	1.7009E-04 (177)	1.7362E-04 (177)
30	1.7439E-04 (120)	1.6449E-04 (120)	1.7852E-04 (120)	1.7256E-04 (120)	1.6140E-04 (137)
31	1.8227E-04 (137)	1.7811E-04 (261)	1.8051E-04 (261)	1.7182E-04 (120)	1.4915E-04 (120)
32	1.4120E-04 (77)	1.7424E-04 (77)	1.8135E-04 (261)	1.7584E-04 (137)	1.6024E-04 (137)
33	9.5575E-05 (77)	7.0142E-05 (77)	6.2952E-05 (77)	5.8457E-05 (77)	5.5374E-05 (77)
34	7.9457E-05 (200)	1.0226E-04 (200)	1.2639E-04 (200)	1.3506E-04 (200)	1.2533E-04 (200)
35	1.5477E-04 (200)	1.2808E-04 (200)	1.2348E-04 (200)	1.1382E-04 (200)	9.7470E-05 (200)
36	1.9694E-04 (200)	1.5718E-04 (200)	1.8096E-04 (200)	1.7948E-04 (200)	1.5290E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
57	1.2081E-04	9	2.07
56	1.1886E-04	5	2.75
335	1.1877E-04	8	2.75
177	1.1838E-04	29	5.23
120	1.1603E-04	30	2.75
261	1.1566E-04	31	2.75
62	1.1027E-04	10	2.75
77	1.0790E-04	32	2.07
37	1.0786E-04	8	3.65
137	1.0460E-04	32	3.65
14	1.0352E-04	8	3.65
7	1.0297E-04	8	3.65
26	1.0191E-04	8	2.75
96	1.0167E-04	11	3.65
94	1.0061E-04	11	2.75
187	9.9714E-05	29	1.17
267	9.9392E-05	25	2.75
103	9.8313E-05	12	1.17
188	9.5782E-05	29	1.17
200	9.4258E-05	16	2.75

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PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

SEWARD PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 2 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.50   BACKGR=     52.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1120.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1085.0	1330.0	1200.0	1350.0	1600.0
2	1090.0	1150.0	1370.0	1500.0	1500.0
3	1100.0	1200.0	1250.0	1400.0	1500.0
4	1115.0	1120.0	1400.0	1440.0	1450.0
5	1120.0	1100.0	1250.0	1420.0	1550.0
6	1130.0	1240.0	1140.0	1440.0	1500.0
7	1130.0	1300.0	1100.0	1300.0	1720.0
8	1135.0	1290.0	1400.0	1150.0	1720.0
9	1150.0	1240.0	1350.0	1400.0	1950.0
10	1145.0	1240.0	1450.0	1800.0	2100.0
11	1135.0	1250.0	1500.0	1950.0	1800.0
12	1120.0	1210.0	1550.0	2100.0	2460.0
13	1120.0	1260.0	1500.0	2100.0	2560.0
14	1120.0	1220.0	1500.0	2000.0	2500.0
15	1120.0	1220.0	1400.0	1850.0	2530.0
16	1100.0	1280.0	1350.0	1700.0	2450.0
17	1100.0	1210.0	1450.0	1640.0	2200.0
18	1100.0	1140.0	1350.0	1620.0	1900.0
19	1070.0	1100.0	1200.0	1600.0	1400.0
20	1080.0	1080.0	1100.0	1540.0	1300.0
21	1240.0	1080.0	1080.0	1300.0	1210.0
22	1210.0	1090.0	1080.0	1080.0	1210.0
23	1270.0	1230.0	1150.0	1080.0	1400.0
24	1420.0	1250.0	1200.0	1200.0	1060.0
25	1485.0	1350.0	1240.0	1300.0	1400.0
26	1500.0	1470.0	1300.0	1400.0	1350.0
27	1420.0	1560.0	1470.0	1460.0	1570.0
28	1310.0	1540.0	1540.0	1400.0	1660.0
29	1440.0	1400.0	1400.0	1550.0	1660.0
30	1550.0	1320.0	1400.0	1600.0	1710.0
31	1550.0	1300.0	1540.0	1620.0	1770.0
32	1560.0	1330.0	1400.0	1700.0	1750.0
33	1530.0	1550.0	1550.0	1800.0	1700.0
34	1400.0	1400.0	1680.0	1550.0	1600.0
35	1250.0	1330.0	1300.0	1580.0	1620.0
36	1180.0	1200.0	1350.0	1350.0	1620.0

STACK # 1--SEWARD STACK 1 SRC NOX
STACK # 2--SEWARD STACK 2 SRC NORMAL NOX

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	44.00	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	97.00	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.03 0.93 0.99 1.10 1.03 0.99 1.13 1.09 1.10 0.92 0.87 0.81

YEAR BASED ON 365. DAYS

PENN. ELEC. SEWARD

NOM--SO2

MAXIMUM MEAN CONC= 5.49588E-05 DIRECTION= 8 DISTANCE= 3.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1		5.23469E-05	5.24132E-05	5.24450E-05	5.24533E-05	5.24211E-05
2		5.24108E-05	5.24613E-05	5.24819E-05	5.24880E-05	5.24624E-05
3		5.26593E-05	5.28215E-05	5.28797E-05	5.28858E-05	5.28093E-05
4		5.30233E-05	5.33511E-05	5.34871E-05	5.35173E-05	5.33820E-05
5		5.34506E-05	5.41090E-05	5.43686E-05	5.44035E-05	5.41212E-05
6		5.34619E-05	5.37530E-05	5.39031E-05	5.39406E-05	5.37677E-05
7		5.34125E-05	5.40514E-05	5.44099E-05	5.45814E-05	5.44375E-05
8		5.33504E-05	5.42271E-05	5.47181E-05	5.49581E-05	5.48140E-05
9		5.31870E-05	5.36414E-05	5.40352E-05	5.43099E-05	5.42982E-05
10		5.35037E-05	5.39014E-05	5.41889E-05	5.43321E-05	5.41942E-05
11		5.37760E-05	5.40846E-05	5.42870E-05	5.43272E-05	5.41014E-05
12		5.35000E-05	5.35267E-05	5.35739E-05	5.35654E-05	5.34316E-05
13		5.28907E-05	5.28643E-05	5.28914E-05	5.28993E-05	5.28490E-05
14		5.24739E-05	5.24836E-05	5.24967E-05	5.25059E-05	5.24837E-05
15		5.23047E-05	5.23253E-05	5.23233E-05	5.23354E-05	5.23470E-05
16		5.22449E-05	5.22653E-05	5.22566E-05	5.22571E-05	5.22587E-05
17		5.22031E-05	5.22109E-05	5.22063E-05	5.22122E-05	5.22173E-05
18		5.21675E-05	5.21915E-05	5.21856E-05	5.21791E-05	5.21666E-05
19		5.21423E-05	5.21880E-05	5.21849E-05	5.21674E-05	5.21341E-05
20		5.21210E-05	5.21781E-05	5.21881E-05	5.21852E-05	5.21709E-05
21		5.21006E-05	5.21733E-05	5.21943E-05	5.21974E-05	5.21805E-05
22		5.20765E-05	5.21537E-05	5.21829E-05	5.22024E-05	5.22100E-05
23		5.20754E-05	5.21631E-05	5.21833E-05	5.21807E-05	5.21577E-05
24		5.20999E-05	5.21878E-05	5.22074E-05	5.22112E-05	5.22028E-05
25		5.21468E-05	5.22623E-05	5.22814E-05	5.22745E-05	5.22486E-05
26		5.21738E-05	5.22388E-05	5.22358E-05	5.22210E-05	5.21982E-05
27		5.22637E-05	5.23001E-05	5.22814E-05	5.22560E-05	5.22250E-05
28		5.24194E-05	5.23745E-05	5.23390E-05	5.23261E-05	5.23118E-05
29		5.26180E-05	5.25758E-05	5.25901E-05	5.26260E-05	5.26440E-05
30		5.28284E-05	5.28653E-05	5.28574E-05	5.28111E-05	5.27015E-05
31		5.29770E-05	5.33458E-05	5.34159E-05	5.33637E-05	5.31727E-05
32		5.28188E-05	5.33884E-05	5.35591E-05	5.35624E-05	5.33795E-05
33		5.24438E-05	5.26675E-05	5.27214E-05	5.27078E-05	5.26235E-05
34		5.22637E-05	5.23644E-05	5.24088E-05	5.24330E-05	5.24201E-05
35		5.22627E-05	5.22712E-05	5.22762E-05	5.22767E-05	5.22569E-05
36		5.24966E-05	5.25379E-05	5.25255E-05	5.24829E-05	5.23968E-05

PENN. ELEC. SEWARD

NOM--502

YEARLY MAXIMUM 24-HOUR CONC= 9.9875E-05 DIRECTION=300. DISTANCE= 2.8 KM DAY=170.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	6.6066E-05 (200)	6.5621E-05 (199)	6.9199E-05 (254)	7.4109E-05 (254)	7.5126E-05 (254)
2	6.4993E-05 (113)	6.1224E-05 (164)	6.2049E-05 (164)	6.1311E-05 (164)	6.0421E-05 (167)
3	7.0917E-05 (208)	6.8071E-05 (349)	6.8891E-05 (349)	6.8370E-05 (263)	6.7321E-05 (263)
4	7.7976E-05 (208)	7.7364E-05 (156)	8.1519E-05 (156)	8.1422E-05 (306)	7.9058E-05 (306)
5	7.5065E-05 (208)	9.0061E-05 (56)	9.4231E-05 (56)	9.1251E-05 (56)	8.2144E-05 (56)
6	7.4434E-05 (189)	7.5176E-05 (39)	7.7995E-05 (332)	8.0557E-05 (332)	7.8191E-05 (332)
7	7.4653E-05 (189)	8.1616E-05 (26)	8.3701E-05 (26)	8.3513E-05 (308)	8.1411E-05 (308)
8	7.6690E-05 (58)	9.5364E-05 (57)	9.5604E-05 (57)	8.9741E-05 (57)	8.5523E-05 (7)
9	7.8751E-05 (183)	7.3651E-05 (9)	7.7002E-05 (9)	7.5516E-05 (9)	7.5361E-05 (124)
10	8.4319E-05 (111)	8.3289E-05 (62)	9.0905E-05 (62)	9.1221E-05 (62)	8.4042E-05 (62)
11	8.5807E-05 (96)	8.4697E-05 (94)	8.8311E-05 (94)	8.9071E-05 (96)	8.4418E-05 (96)
12	8.6696E-05 (103)	7.8076E-05 (79)	7.9537E-05 (275)	8.0376E-05 (275)	7.5904E-05 (275)
13	7.7663E-05 (103)	7.5329E-05 (67)	7.8904E-05 (67)	7.7358E-05 (67)	7.1515E-05 (67)
14	7.2060E-05 (117)	6.6823E-05 (185)	6.5946E-05 (303)	6.6112E-05 (303)	6.4009E-05 (303)
15	6.9135E-05 (219)	6.4480E-05 (219)	6.2440E-05 (220)	6.2852E-05 (86)	6.4707E-05 (86)
16	6.8955E-05 (219)	6.6277E-05 (186)	6.3434E-05 (186)	6.3268E-05 (20)	6.6772E-05 (19)
17	6.9589E-05 (180)	6.7605E-05 (186)	6.4430E-05 (186)	6.0800E-05 (186)	6.1608E-05 (218)
18	7.2309E-05 (180)	6.8289E-05 (180)	6.4293E-05 (180)	6.0660E-05 (180)	5.9577E-05 (210)
19	6.8775E-05 (180)	6.5431E-05 (180)	6.1902E-05 (180)	6.2405E-05 (218)	6.3015E-05 (218)
20	6.2790E-05 (180)	6.3134E-05 (181)	6.0982E-05 (179)	5.9858E-05 (179)	5.9025E-05 (160)
21	6.2329E-05 (181)	6.6027E-05 (181)	6.5657E-05 (218)	6.5391E-05 (218)	6.3245E-05 (218)
22	5.9990E-05 (181)	6.4882E-05 (181)	6.3805E-05 (181)	6.5056E-05 (159)	6.6123E-05 (159)
23	5.7256E-05 (181)	6.2719E-05 (181)	6.2695E-05 (267)	6.3128E-05 (267)	6.1287E-05 (267)
24	5.8092E-05 (179)	6.3544E-05 (267)	6.6132E-05 (267)	6.5804E-05 (267)	6.2977E-05 (267)
25	6.0696E-05 (179)	7.8964E-05 (267)	8.5054E-05 (267)	8.4398E-05 (267)	7.8093E-05 (267)
26	6.0797E-05 (179)	6.3127E-05 (179)	6.3495E-05 (267)	6.3149E-05 (267)	6.0944E-05 (267)
27	6.5195E-05 (187)	6.6904E-05 (73)	6.8715E-05 (73)	6.7445E-05 (73)	6.3702E-05 (73)
28	7.9628E-05 (187)	6.7749E-05 (187)	6.5185E-05 (73)	6.3023E-05 (73)	5.1410E-05 (119)
29	8.8606E-05 (187)	7.6706E-05 (187)	8.2884E-05 (177)	9.3960E-05 (177)	9.6717E-05 (177)
30	9.1345E-05 (120)	9.8240E-05 (120)	9.9875E-05 (120)	9.5521E-05 (120)	8.5146E-05 (120)
31	8.1963E-05 (194)	9.5715E-05 (261)	9.9679E-05 (261)	9.5319E-05 (261)	8.4481E-05 (261)
32	8.0194E-05 (77)	8.9617E-05 (77)	8.7799E-05 (77)	8.8853E-05 (137)	8.2914E-05 (137)
33	6.7708E-05 (112)	6.9912E-05 (6)	7.2988E-05 (6)	7.1956E-05 (6)	6.7472E-05 (6)
34	6.6238E-05 (112)	6.2518E-05 (112)	6.1392E-05 (325)	6.1382E-05 (311)	6.0569E-05 (311)
35	7.1704E-05 (200)	6.4693E-05 (200)	6.2247E-05 (200)	6.3186E-05 (201)	6.2461E-05 (201)
36	8.2586E-05 (200)	8.3462E-05 (200)	8.4442E-05 (200)	8.2115E-05 (200)	7.5554E-05 (200)

PENN. ELEC. SEWARD

NON--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.8588E-04 DIRECTION= 60. DISTANCE= 2.8 KM DAY= 19. HOUR= 300.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

RANGE DIR	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.2677E-04 (195)	1.1143E-04 (204)	1.1531E-04 (254)	1.3613E-04 (254)	1.3734E-04 (254)
2	1.2863E-04 (230)	1.0281E-04 (113)	1.0067E-04 (113)	1.0524E-04 (93)	1.0749E-04 (205)
3	1.5218E-04 (238)	1.2231E-04 (191)	1.3284E-04 (312)	1.4159E-04 (312)	1.3907E-04 (241)
4	1.4494E-04 (205)	1.3125E-04 (156)	1.4107E-04 (156)	1.3675E-04 (156)	1.3895E-04 (114)
5	1.7250E-04 (237)	1.3810E-04 (3)	1.7087E-04 (3)	1.8145E-04 (3)	1.6596E-04 (3)
6	1.6529E-04 (110)	1.7266E-04 (39)	1.8588E-04 (39)	1.7526E-04 (39)	1.4899E-04 (39)
7	1.5770E-04 (154)	1.3366E-04 (26)	1.4691E-04 (234)	1.5540E-04 (309)	1.5823E-04 (42)
8	1.4548E-04 (58)	1.4122E-04 (93)	1.3791E-04 (19)	1.4108E-04 (234)	1.3545E-04 (234)
9	1.4539E-04 (143)	1.2985E-04 (9)	1.3897E-04 (9)	1.4395E-04 (245)	1.4581E-04 (42)
10	1.4771E-04 (91)	1.4097E-04 (93)	1.3996E-04 (94)	1.4116E-04 (256)	1.3495E-04 (229)
11	1.6053E-04 (97)	1.3977E-04 (93)	1.5380E-04 (81)	1.6169E-04 (81)	1.4967E-04 (81)
12	1.4515E-04 (95)	1.3073E-04 (79)	1.4009E-04 (126)	1.3430E-04 (126)	1.2753E-04 (98)
13	1.4583E-04 (303)	1.2173E-04 (67)	1.3163E-04 (67)	1.2732E-04 (284)	1.3215E-04 (206)
14	1.2267E-04 (117)	1.2438E-04 (185)	1.1386E-04 (185)	1.2205E-04 (302)	1.1806E-04 (302)
15	1.3945E-04 (219)	1.1899E-04 (210)	1.1564E-04 (210)	1.0378E-04 (210)	1.1056E-04 (20)
16	1.3048E-04 (220)	1.1158E-04 (186)	1.0216E-04 (186)	1.1153E-04 (20)	1.1985E-04 (20)
17	1.3127E-04 (180)	1.1519E-04 (186)	1.0062E-04 (186)	1.0445E-04 (218)	1.0634E-04 (218)
18	1.2216E-04 (180)	1.0785E-04 (186)	1.0261E-04 (210)	9.8592E-05 (210)	9.0925E-05 (92)
19	1.2276E-04 (180)	1.0469E-04 (180)	9.1954E-05 (182)	1.0235E-04 (218)	1.0591E-04 (218)
20	1.1837E-04 (218)	1.0732E-04 (181)	9.4576E-05 (181)	8.8892E-05 (179)	9.6377E-05 (219)
21	1.3276E-04 (218)	1.2352E-04 (218)	1.1276E-04 (218)	1.0091E-04 (218)	9.6487E-05 (73)
22	9.4129E-05 (218)	8.9564E-05 (181)	9.3718E-05 (128)	9.1809E-05 (128)	1.0188E-04 (217)
23	7.8773E-05 (196)	9.8862E-05 (181)	1.0551E-04 (267)	1.1123E-04 (267)	1.0517E-04 (218)
24	8.7114E-05 (130)	9.9073E-05 (267)	1.1201E-04 (267)	1.1217E-04 (267)	1.0442E-04 (266)
25	9.7293E-05 (130)	1.2592E-04 (267)	1.4376E-04 (267)	1.4246E-04 (267)	1.2765E-04 (267)
26	1.0563E-04 (130)	1.0617E-04 (179)	1.1212E-04 (267)	1.0998E-04 (267)	9.8723E-05 (267)
27	1.2570E-04 (187)	1.2573E-04 (73)	1.3220E-04 (73)	1.2708E-04 (73)	1.1602E-04 (87)
28	1.5550E-04 (187)	1.3191E-04 (73)	1.2985E-04 (73)	1.1744E-04 (73)	1.0346E-04 (119)
29	1.4601E-04 (187)	1.1327E-04 (188)	1.1731E-04 (177)	1.3107E-04 (177)	1.3414E-04 (177)
30	1.4729E-04 (120)	1.3530E-04 (120)	1.4660E-04 (120)	1.4234E-04 (120)	1.2869E-04 (137)
31	1.5250E-04 (258)	1.4840E-04 (243)	1.7383E-04 (243)	1.7864E-04 (243)	1.6165E-04 (243)
32	1.5851E-04 (258)	1.4211E-04 (244)	1.4875E-04 (261)	1.4283E-04 (261)	1.2928E-04 (258)
33	1.2794E-04 (112)	1.2852E-04 (6)	1.3693E-04 (6)	1.2969E-04 (6)	1.1033E-04 (6)
34	1.1182E-04 (112)	1.1808E-04 (325)	1.2799E-04 (325)	1.2706E-04 (311)	1.2055E-04 (311)
35	1.3139E-04 (200)	1.1044E-04 (200)	1.0707E-04 (200)	9.9804E-05 (200)	9.8631E-05 (201)
36	1.7842E-04 (201)	1.3167E-04 (200)	1.5078E-04 (200)	1.4952E-04 (200)	1.3023E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
120	9.9875E-05	30	2.75
261	9.9679E-05	31	2.75
177	9.6717E-05	29	5.23
57	9.5604E-05	8	2.75
56	9.4231E-05	5	2.75
62	9.1221E-05	10	3.65
77	8.9617E-05	32	2.07
96	8.9071E-05	11	3.65
137	8.8851E-05	37	3.65
335	8.8721E-05	8	2.75
167	8.8606E-05	29	1.17
94	8.8311E-05	11	2.75
14	8.7834E-05	8	3.65
7	8.7462E-05	8	3.65
37	8.7231E-05	8	3.65
26	8.6999E-05	8	2.75
103	8.6696E-05	12	1.17
188	8.5548E-05	29	1.17
267	8.5054E-05	25	2.75
200	8.4442E-05	36	2.75

PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

1975 DATA MAXIMUM LOAD SEWARD

STACK # 1--SEWARD STACK 1 - MAXIMUM LOAD SRC-NOX
STACK # 2--SEWARD STACK 2 - MAXIMUM LOAD SRC-NOX

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	69.00	0.00	60.60	2.40	31.30	449.00	141.60
2	NOM	89.00	0.00	60.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 1 JDAY= 7

ISTAB=	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4
AWS=	7.6	7.6	9.4	8.5	9.4	8.5	8.5	8.1	9.4	8.9	8.9	9.4	7.2	4.0	4.0	4.5	3.6	5.4	6.3	8.1	8.1	6.3	6.3	6.3
TEMP=	273.	273.	273.	273.	273.	273.	273.	273.	273.	274.	274.	275.	276.	277.	277.	277.	277.	276.	276.	277.	277.	277.	277.	277.
AFV=	59.	71.	80.	83.	82.	84.	85.	83.	77.	82.	83.	89.	86.	82.	82.	71.	38.	5.	2.	18.	23.	26.	6.	357.
AFVR=	59.	71.	80.	83.	82.	84.	85.	83.	77.	82.	83.	89.	86.	82.	82.	71.	38.	5.	2.	18.	23.	26.	6.	357.
HLH1=	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.												
	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.												

JYR=75 IHO= 1 JDAY= 14

ISTAB=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	2	3	3	3	3	3	3	3	3
AWS=	7.6	8.9	8.1	7.6	7.6	8.1	8.9	10.3	8.9	6.7	6.7	8.5	8.5	8.5	8.1	8.1	7.6	8.1	9.4	9.4	8.5	8.1	8.9	9.4
TEMP=	260.	260.	259.	259.	259.	259.	258.	258.	258.	259.	259.	259.	259.	260.	260.	260.	260.	260.	260.	259.	260.	260.	260.	260.
AFV=	101.	90.	88.	79.	84.	81.	75.	76.	71.	77.	80.	81.	87.	84.	81.	85.	81.	85.	84.	80.	75.	73.	72.	70.
AFVR=	101.	90.	88.	79.	84.	81.	75.	76.	71.	77.	80.	81.	87.	84.	81.	85.	81.	85.	84.	80.	75.	73.	72.	70.
HLH1=	959.	959.	959.	959.	959.	959.	1013.	1067.	1121.	1175.	1228.	1282.												
	1336.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.												

JYR=75 IHO= 1 JDAY= 26

ISTAB=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3
AWS=	11.2	11.6	12.1	13.0	13.9	13.9	14.8	16.1	14.8	15.2	15.6	15.6	15.2	14.8	15.2	16.5	14.3	16.1	13.9	13.0	13.9	13.0	12.5	11.6
TEMP=	271.	271.	271.	271.	270.	270.	270.	269.	269.	269.	269.	269.	269.	269.	269.	268.	267.	267.	267.	267.	267.	267.	266.	266.	266.
AFV=	75.	72.	71.	65.	82.	77.	76.	78.	73.	75.	80.	78.	86.	85.	88.	88.	91.	92.	88.	88.	86.	88.	87.	87.
AFVR=	75.	72.	71.	65.	82.	77.	76.	78.	73.	75.	80.	78.	86.	85.	88.	88.	91.	92.	88.	88.	86.	88.	87.	87.
HLH1=	566.	566.	566.	566.	566.	566.	598.	629.	661.	693.	725.	756.												
	788.	820.	820.	820.	820.	820.	820.	820.	820.	820.	820.	820.												

JYR=75 IHO= 2 JDAY= 37

ISTAB=	3	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
AWS=	8.1	8.5	8.5	9.8	11.2	11.2	10.3	9.4	10.3	10.7	10.7	10.3	10.3	8.5	8.1	7.6	6.7	7.2	6.7	6.3	6.7	6.7	7.6	7.2
TEMP=	272.	272.	273.	274.	274.	274.	273.	273.	272.	271.	271.	271.	271.	271.	271.	271.	271.	271.	271.	271.	270.	270.	270.	270.
AFV=	68.	67.	67.	73.	76.	80.	85.	92.	88.	88.	83.	87.	86.	87.	85.	88.	92.	91.	93.	92.	86.	85.	91.	97.
AFVR=	68.	67.	67.	73.	76.	80.	85.	92.	88.	88.	83.	87.	86.	87.	85.	88.	92.	91.	93.	92.	86.	85.	91.	97.
HLH1=	1100.	1100.	1100.	1100.	1100.	1100.	1094.	1088.	1081.	1075.	1069.	1063.												
	1056.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.												

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JYR=75 IMO= 2 JDAY= 56
ISTAR=  3    3    3    1    3    3    3    3    3    3    3    3    1    3    3    3    3    3    3    3    3    3    3    3
AWS= 10.7  8.5  7.2  7.2  8.9 10.7 10.7  9.8 12.5 13.4 15.2 15.2 13.0 13.4 16.5 16.1 16.5 16.5 18.3 18.3 16.1 17.9 20.1 19.2
TEMP= 271. 271. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 271. 271. 271. 271. 271. 271. 271. 272. 271. 271. 272. 272. 273.
AFV=   93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
AFVR=  93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
HLHI= 1709. 1709. 1709. 1700. 1700. 1700. 1609. 1518. 1426. 1335. 1244. 1153.
      1061.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.


JYR=75 IMO= 2 JDAY= 57
ISTAR=  3    3    3    1    3    3    3    3    1    3    3    3    2    2    3    2    3    3    3    3    3    3    3    3
AWS= 19.2 17.4 17.9 16.1 15.7 15.2 13.9 13.9 14.3 16.1 16.5 16.1 15.6 17.0 16.5 15.6 14.3 13.9 13.0 12.5 13.4 13.4 12.1 11.6
TEMP= 272. 271. 271. 271. 271. 271. 270. 270. 270. 271. 272. 273. 274. 274. 275. 275. 274. 274. 274. 273. 273. 273. 272. 272.
AFV=   92.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
AFVR=  87.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
HLHI= 2000. 2000. 2000. 2000. 2000. 2000. 1968. 1935. 1903. 1870. 1838. 1805.
      1773. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740.


JYR=75 IMO= 3 JDAY= 62
ISTAR=  3    3    1    3    3    1    3    3    3    2    1    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS=  9.8  9.4  9.5  8.9  8.9  9.8 10.3  9.4  9.4  9.8 10.3 10.7 11.6 11.6 12.1 10.3 10.3 11.2 12.1 10.7 12.5 12.1 10.3  9.8
TEMP= 263. 263. 262. 262. 263. 262. 262. 262. 262. 263. 264. 264. 265. 265. 264. 264. 265. 264. 264. 264. 264. 263. 263. 263.
AFV=  118. 118. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
AFVR= 118. 118. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
HLHI= 1050. 1050. 1050. 1050. 1050. 1050. 1174. 1298. 1421. 1545. 1669. 1793.
      1916. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040.


JYR=75 IMO= 3 JDAY= 77
ISTAR=  4    3    3    1    3    3    3    3    3    2    1    1    1    1    1    2    3    3    3    3    3    3    3    3
AWS=  9.4 10.3  8.9 11.2 13.9 12.5 15.2 14.3 12.5 13.4 15.6 13.0 12.1 13.0 13.4 11.2 14.8 14.3 17.0 18.3 13.9 13.0 13.0 13.4
TEMP= 277. 277. 276. 276. 275. 275. 275. 275. 275. 276. 277. 279. 279. 280. 280. 281. 280. 278. 277. 276. 276. 275. 275. 276.
AFV=  312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
AFVR= 312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
HLHI=  100.  100.  100.  100.  100.  100.  250.  400.  550.  700.  850. 1000.
      1150. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.


JYR=75 IMO= 4 JDAY= 94
ISTAR=  3    3    3    1    3    3    3    3    3    3    3    1    3    3    3    3    3    3    3    3    3    3    3    3
AWS= 15.6 18.8 17.0 17.9 17.9 17.9 15.6 14.8 15.6 11.2 13.0 10.3 11.6 11.2 13.0 12.1 12.1 11.6 11.2 11.2 10.7 10.7 11.2 11.2
TEMP= 266. 266. 265. 265. 265. 265. 265. 264. 265. 265. 266. 266. 268. 269. 270. 270. 269. 268. 266. 266. 266. 266. 265. 265.
AFV=  115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
AFVR= 115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
HLHI= 1000. 1000. 1000. 1000. 1000. 1000. 1106. 1213. 1319. 1425. 1531. 1638.
      1744. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.


JYR=75 IMO= 4 JDAY= 96
ISTAR=  3    3    3    1    3    3    3    3    2    1    1    1    1    1    1    1    2    2    3    3    3    3    3    3
AWS=  6.3  8.1  8.1  7.2  8.1  8.1  8.5  9.4  9.8  9.4  9.8  9.4  9.8 11.2 10.3 11.2 11.6 10.7  8.9  9.8  9.8  8.9  7.6  6.3
TEMP= 266. 267. 267. 266. 266. 267. 267. 267. 268. 269. 270. 271. 271. 272. 272. 272. 271. 271. 270. 269. 268. 268. 267. 268.
AFV=  120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 118. 120.
AFVR= 120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 118. 120.
HLHI=  336.  336.  336.  336.  336.  336.  444.  552.  660.  768.  876.  984.
      1092. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200.
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JYR=75 IMO= 4 JDAY=103
ISTAB=  4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  1.6  3.1  3.1  2.7  2.2  1.8  1.8  1.3  2.7  3.6  4.5  5.4  6.3  6.3  6.3  6.7  6.7  5.4  4.9  4.0  4.0  3.6  3.6  3.6
TEMP= 270. 270. 270. 270. 270. 270. 271. 271. 272. 273. 275. 276. 277. 277. 277. 277. 277. 276. 275. 274. 274. 272. 272. 272.
AFV=  190. 126. 127. 106.  91.  91.  77.  77. 101. 129. 121. 126. 174. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
AFVR= 190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
HLHI=  778.  778.  778.  778.  778.  778. 1029. 1279. 1529. 1779. 2029. 2280.
      2530. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780.


JYR=75 IMO= 4 JDAY=120
ISTAB=  3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    1    2    3    3    3    3    3    3
AWS=  9.4  9.8 10.3  9.8 10.7  9.8 10.3 11.2 11.2 10.7 10.3 11.2 11.2  9.4 11.6 11.6 11.2 10.7 10.3  9.4  9.8 11.2 12.1 12.5
TEMP= 280. 280. 281. 281. 280. 280. 281. 281. 282. 284. 284. 285. 284. 285. 284. 284. 284. 283. 282. 282. 282. 282. 282. 282.
AFV=  310. 311. 311. 308. 305. 304. 306. 307. 307. 303. 303. 305. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
AFVR= 310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
HLHI=  600.  600.  600.  600.  600.  600.  600.  720.  840.  960. 1080. 1170.
      1290. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.


JYR=75 IMO= 5 JDAY=137
ISTAB=  4    4    4    4    4    4    3    3    3    3    2    2    2    3    3    3    3    3    3    3    3    3    3    3
AWS=  6.3  6.7 10.3  8.5  6.3  5.8  6.7  7.2  5.8  6.3  6.7  7.6  8.1  7.6  8.1  8.1  9.8  8.9  8.5  8.1  8.5  9.4  9.8  9.4
TEMP= 285. 285. 284. 284. 285. 284. 285. 286. 287. 289. 290. 291. 291. 291. 291. 290. 289. 289. 288. 287. 287. 286. 286. 286.
AFV=  275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
AFVR= 275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
HLHI=  100.  100.  100.  100.  100.  100.  234.  368.  501.  635.  769.  903.
      1036. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170.


JYR=75 IMO= 6 JDAY=177
ISTAB=  4    3    3    4    4    4    4    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    3    3
AWS=  5.8  4.9  4.5  4.0  4.9  5.4  5.4  6.7  5.8  5.4  4.9  5.8  6.7  5.4  5.4  5.8  5.8  4.9  5.8  6.7  7.2  7.6  7.2  4.9
TEMP= 291. 291. 291. 291. 291. 291. 290. 290. 290. 291. 290. 290. 290. 290. 291. 292. 291. 290. 289. 290. 289. 289. 289. 289.
AFV=  290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
AFVR= 290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
HLHI=  100.  100.  100.  100.  100.  100.  189.  278.  366.  455.  544.  633.
      721.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.


JYR=75 IMO= 7 JDAY=187
ISTAB=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  3.6  3.6  3.1  3.1  3.1  3.1  4.0  4.5  2.7  4.0  4.5  4.5  4.0  4.5  4.0  3.6  4.0  4.5  4.9  5.4  6.3  5.4  5.4  4.5
TEMP= 293. 292. 292. 291. 291. 291. 291. 292. 294. 295. 296. 297. 298. 298. 299. 299. 299. 297. 296. 295. 294. 294. 293. 292.
AFV=  300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
AFVR= 300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
HLHI=  389.  389.  389.  389.  389.  389.  571.  754.  937. 1119. 1302. 1485.
      1667. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.


JYR=75 IMO= 7 JDAY=188
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  4.5  3.6  4.0  2.2  2.2  4.0  5.8  4.0  3.6  2.7  2.7  4.5  5.8  4.9  4.9  5.8  4.9  4.9  4.5  4.0  3.1  4.0  4.9  4.0
TEMP= 292. 291. 291. 290. 290. 289. 290. 291. 292. 294. 296. 296. 296. 296. 296. 295. 294. 294. 294. 293. 292. 291. 291. 289.
AFV=  310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
AFVR= 310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
HLHI=  450.  450.  450.  450.  450.  450.  556.  663.  769.  875.  981. 1088.
      1194. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.
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JYR=75 LWO= 1 JDAY=200
ISTAR=  4    4    4    4    4    3    3    3    3    2    1    1    1    2    2    2    3    3    3    3    3    4    4    4
AWS=  6.7  8.9  8.9  8.9  9.8 10.3 10.3  9.4  9.4  9.4  8.1  8.9  8.1  8.9  9.4  8.9  8.9  7.6  8.9  6.7  6.7  8.1  8.9  9.8
TEMP= 292. 292. 292. 292. 292. 292. 291. 294. 294. 294. 296. 297. 297. 298. 299. 299. 299. 298. 297. 297. 297. 295. 296. 296.
AFV=  350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.  350.  350.   0.  340.  340.   0.   0.   0.   0.
AFVR= 350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.  350.  350.   0.  340.  340.   0.   0.   0.   0.
HLHI= 1100. 1100. 1100. 1100. 1100. 1100. 1154. 1208. 1261. 1315. 1369. 1423.
      1476. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530.


JYR=75 LWO= 9 JDAY=261
ISTAR=  3    4    4    4    3    4    4    4    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    4
AWS=  8.5  9.8 10.7  9.8 10.7 11.7 12.5 12.5 12.1 11.6 11.3 14.3 15.2 13.9 13.9 13.9 13.4 12.5 11.6 12.1 11.2 11.6 10.7  9.4
TEMP= 287. 286. 287. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 287. 287. 287. 287. 287. 287. 287. 287. 287.
AFV=  315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
AFVR= 315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
HLHI= 600.  600.  600.  600.  600.  600.  600.  571.  543.  514.  485.  456.  428.
      399.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.


JYR=75 LWO= 9 JDAY=267
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS=  9.4 10.7 11.6 13.4  9.8  8.1  8.9 10.7 10.3 10.3 10.7  9.4  8.9  8.9  8.5  9.4 10.7 10.7  9.8 10.7  9.8 11.2 10.3 10.3 10.3
TEMP= 282. 282. 282. 282. 281. 282. 281. 282. 282. 282. 282. 282. 282. 283. 282. 282. 282. 282. 282. 283. 283. 283. 284. 283.
AFV=  248. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
AFVR= 248. 242. 238. 258. 263. 238. 235. 246. 250. 250. 250. 255. 250. 247. 247. 247. 250. 253. 259. 258. 263. 266. 266. 272.
HLHI= 1400. 1400. 1400. 1400. 1400. 1400. 1245. 1090.  935.  780.  625.  470.
      315.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.  160.


JYR=75 LWO=12 JDAY=335
ISTAR=  3    3    3    3    2    3    3    3    3    3    2    2    2    2    2    3    3    3    3    3    4    4    4    4
AWS= 14.3 14.8 12.5 12.5 15.2 14.8 12.1 12.5 13.9 13.9 15.2 13.9 11.6 13.4 10.7  9.8  9.4  7.6  7.6  7.6  8.9  6.7  5.8  4.9
TEMP= 279. 276. 274. 272. 271. 270. 269. 269. 269. 268. 268. 269. 269. 269. 270. 269. 268. 268. 283. 283. 283. 283. 283. 283.
AFV=   87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
AFVR=  87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
HLHI= 1800. 1800. 1800. 1800. 1800. 1800. 1775. 1750. 1725. 1700. 1675. 1650.
      1625. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600.

YEAR BASED ON  20. DAYS
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PENN, ELEC, SEWARD

NOX--SO2

MAXIMUM MEAN CONC= 6.5408E-05 DIRECTION= 8 DISTANCE= 2.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1		5.27069E-05	5.23241E-05	5.22006E-05	5.21192E-05	5.20599E-05
2		5.21533E-05	5.20540E-05	5.20302E-05	5.20167E-05	5.20079E-05
3		5.20235E-05	5.20084E-05	5.20159E-05	5.20460E-05	5.21013E-05
4		5.20320E-05	5.20335E-05	5.20208E-05	5.20102E-05	5.20031E-05
5		5.28505E-05	5.44002E-05	5.46240E-05	5.44138E-05	5.38380E-05
6		5.25495E-05	5.32327E-05	5.33472E-05	5.32595E-05	5.29816E-05
7		5.45394E-05	5.72500E-05	5.78117E-05	5.75112E-05	5.63698E-05
8		5.70698E-05	6.35580E-05	6.54084E-05	6.51343E-05	6.26808E-05
9		5.41120E-05	5.46317E-05	5.48725E-05	5.47973E-05	5.42975E-05
10		5.49136E-05	5.63409E-05	5.66779E-05	5.65546E-05	5.53800E-05
11		5.61807E-05	5.73737E-05	5.77146E-05	5.73431E-05	5.62136E-05
12		5.52275E-05	5.49506E-05	5.48839E-05	5.46451E-05	5.41357E-05
13		5.36641E-05	5.29571E-05	5.26993E-05	5.24963E-05	5.23078E-05
14		5.25783E-05	5.22520E-05	5.21516E-05	5.20883E-05	5.20433E-05
15		5.21253E-05	5.20478E-05	5.20269E-05	5.20146E-05	5.20066E-05
16		5.20160E-05	5.20051E-05	5.20026E-05	5.20013E-05	5.20005E-05
17		5.20012E-05	5.20003E-05	5.20001E-05	5.20001E-05	5.20000E-05
18		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
19		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
20		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
21		5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05	5.20000E-05
22		5.20026E-05	5.20059E-05	5.20044E-05	5.20024E-05	5.20008E-05
23		5.20772E-05	5.24357E-05	5.25678E-05	5.25822E-05	5.24803E-05
24		5.21430E-05	5.26605E-05	5.27933E-05	5.27657E-05	5.26043E-05
25		5.23854E-05	5.36179E-05	5.39442E-05	5.38834E-05	5.35056E-05
26		5.24329E-05	5.27521E-05	5.28226E-05	5.27635E-05	5.25976E-05
27		5.31478E-05	5.26848E-05	5.25130E-05	5.23737E-05	5.22447E-05
28		5.48555E-05	5.36554E-05	5.32327E-05	5.29557E-05	5.27060E-05
29		5.71047E-05	5.61105E-05	5.62063E-05	5.63013E-05	5.59450E-05
30		5.80213E-05	5.69681E-05	5.66626E-05	5.57911E-05	5.48169E-05
31		5.72512E-05	5.74561E-05	5.70754E-05	5.62951E-05	5.51464E-05
32		5.55153E-05	5.72468E-05	5.75085E-05	5.70589E-05	5.59337E-05
33		5.28737E-05	5.24027E-05	5.22447E-05	5.21414E-05	5.20709E-05
34		5.24534E-05	5.24165E-05	5.24634E-05	5.24617E-05	5.23841E-05
35		5.30148E-05	5.26473E-05	5.25197E-05	5.24024E-05	5.22717E-05
36		5.35560E-05	5.36151E-05	5.36548E-05	5.35240E-05	5.31826E-05

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.0598E-04 DIRECTION= 80. DISTANCE= 2.1 KM DAY= 57.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	6.6136E-05 (200)	5.8481E-05 (200)	5.6013E-05 (200)	5.4383E-05 (200)	5.3198E-05 (200)
2	5.5066E-05 (200)	5.3080E-05 (200)	5.2603E-05 (200)	5.2330E-05 (200)	5.2155E-05 (200)
3	5.2470E-05 (200)	5.2140E-05 (200)	5.2246E-05 (7)	5.2883E-05 (7)	5.4011E-05 (7)
4	5.2595E-05 (56)	5.2660E-05 (56)	5.2409E-05 (56)	5.2198E-05 (56)	5.2059E-05 (56)
5	6.8769E-05 (56)	9.9836E-05 (56)	1.0438E-04 (56)	1.0022E-04 (56)	8.8744E-05 (56)
6	5.7031E-05 (56)	6.5056E-05 (56)	6.6501E-05 (56)	6.5731E-05 (56)	6.2837E-05 (56)
7	6.9416E-05 (57)	8.5515E-05 (26)	8.7375E-05 (26)	8.4013E-05 (14)	8.0481E-05 (14)
8	8.5997E-05 (335)	1.0598E-04 (57)	1.0569E-04 (57)	1.0002E-04 (335)	8.9524E-05 (37)
9	6.7543E-05 (335)	6.5403E-05 (335)	7.0943E-05 (37)	7.5773E-05 (37)	7.5122E-05 (37)
10	7.2008E-05 (96)	8.9572E-05 (62)	9.7857E-05 (62)	9.7593E-05 (62)	8.8830E-05 (62)
11	8.7141E-05 (96)	8.6807E-05 (94)	9.0483E-05 (96)	9.0934E-05 (96)	8.5590E-05 (96)
12	8.8216E-05 (103)	7.2219E-05 (103)	7.1373E-05 (94)	7.0472E-05 (94)	6.6962E-05 (96)
13	7.8732E-05 (103)	6.5619E-05 (103)	6.0773E-05 (103)	5.7444E-05 (103)	5.4902E-05 (94)
14	6.2612E-05 (103)	5.6724E-05 (103)	5.4860E-05 (103)	5.3675E-05 (103)	5.2825E-05 (103)
15	5.4420E-05 (103)	5.2937E-05 (103)	5.2529E-05 (103)	5.2289E-05 (103)	5.2130E-05 (103)
16	5.2316E-05 (103)	5.2102E-05 (103)	5.2052E-05 (103)	5.2026E-05 (103)	5.2010E-05 (103)
17	5.2023E-05 (103)	5.2006E-05 (103)	5.2003E-05 (103)	5.2001E-05 (103)	5.2000E-05 (103)
18	5.2001E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)
19	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)
20	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)
21	5.2000E-05 (267)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)	5.2000E-05 (7)
22	5.2052E-05 (267)	5.2118E-05 (267)	5.2088E-05 (267)	5.2048E-05 (267)	5.2015E-05 (267)
23	5.3541E-05 (267)	6.0713E-05 (267)	6.3356E-05 (267)	6.3644E-05 (267)	6.1607E-05 (267)
24	5.4779E-05 (267)	6.5187E-05 (267)	6.7854E-05 (267)	6.7310E-05 (267)	6.4085E-05 (267)
25	5.8758E-05 (267)	8.4016E-05 (267)	9.0701E-05 (267)	8.9574E-05 (267)	8.2071E-05 (267)
26	5.6029E-05 (187)	6.4496E-05 (267)	6.6960E-05 (267)	6.6423E-05 (267)	6.3538E-05 (267)
27	6.5378E-05 (187)	5.8598E-05 (187)	5.6135E-05 (187)	5.5595E-05 (267)	5.4870E-05 (267)
28	8.0112E-05 (187)	6.7783E-05 (187)	6.2402E-05 (187)	5.8716E-05 (177)	5.9328E-05 (177)
29	8.9386E-05 (187)	7.6943E-05 (187)	8.9412E-05 (177)	1.0170E-04 (177)	1.0393E-04 (177)
30	9.3241E-05 (120)	1.0087E-04 (120)	1.0213E-04 (120)	9.7177E-05 (120)	8.6142E-05 (120)
31	7.4690E-05 (120)	9.8260E-05 (261)	1.0179E-04 (261)	9.6845E-05 (261)	8.5394E-05 (261)
32	8.5179E-05 (77)	9.5770E-05 (77)	9.3295E-05 (77)	9.3158E-05 (137)	8.6141E-05 (137)
33	6.2332E-05 (77)	5.6455E-05 (77)	5.4670E-05 (77)	5.3558E-05 (77)	5.2818E-05 (77)
34	5.7968E-05 (200)	5.9272E-05 (200)	6.0684E-05 (200)	6.0912E-05 (200)	5.9521E-05 (200)
35	7.1889E-05 (200)	6.4831E-05 (200)	6.2336E-05 (200)	6.0018E-05 (200)	5.7421E-05 (200)
36	8.3087E-05 (200)	8.4295E-05 (200)	8.5093E-05 (200)	8.2479E-05 (200)	7.5652E-05 (200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.6494E-04 DIRECTION= 0. DISTANCE= 1.2 KM DAY=200. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.0798E-04 (200)	7.7809E-05 (200)	6.7946E-05 (200)	6.1522E-05 (200)	5.6812E-05 (200)
2	7.2216E-05 (200)	5.9286E-05 (200)	5.6164E-05 (200)	5.4342E-05 (200)	5.3139E-05 (200)
3	5.5702E-05 (200)	5.3110E-05 (200)	5.3964E-05 (7)	5.9063E-05 (7)	6.8085E-05 (7)
4	5.3655E-05 (56)	5.3306E-05 (56)	5.2740E-05 (56)	5.2366E-05 (56)	5.2117E-05 (56)
5	9.8182E-05 (56)	1.4633E-04 (56)	1.4645E-04 (56)	1.4089E-04 (56)	1.2211E-04 (56)
6	7.0028E-05 (56)	8.4330E-05 (56)	8.4155E-05 (26)	8.2155E-05 (56)	7.8681E-05 (56)
7	1.1218E-04 (57)	1.4495E-04 (57)	1.4600E-04 (26)	1.4078E-04 (26)	1.2742E-04 (14)
8	1.4017E-04 (335)	1.4645E-04 (57)	1.4825E-04 (335)	1.4309E-04 (7)	1.3361E-04 (335)
9	1.1977E-04 (335)	1.1294E-04 (26)	1.2670E-04 (56)	1.3712E-04 (56)	1.3189E-04 (37)
10	1.2596E-04 (62)	1.4217E-04 (94)	1.4376E-04 (94)	1.3928E-04 (62)	1.2630E-04 (62)
11	1.4747E-04 (96)	1.4395E-04 (94)	1.4296E-04 (94)	1.4054E-04 (94)	1.3441E-04 (96)
12	1.4492E-04 (103)	1.0593E-04 (94)	1.1432E-04 (94)	1.1444E-04 (96)	1.0364E-04 (96)
13	1.2437E-04 (103)	8.8130E-05 (103)	8.2813E-05 (94)	8.1608E-05 (94)	7.5111E-05 (94)
14	8.9128E-05 (103)	6.8386E-05 (103)	6.2037E-05 (103)	5.7990E-05 (103)	5.5036E-05 (103)
15	6.2770E-05 (103)	5.6312E-05 (103)	5.4500E-05 (103)	5.3407E-05 (103)	5.2659E-05 (103)
16	5.3727E-05 (103)	5.2586E-05 (103)	5.2310E-05 (103)	5.2159E-05 (103)	5.2065E-05 (103)
17	5.2149E-05 (103)	5.2040E-05 (103)	5.2018E-05 (103)	5.2008E-05 (103)	5.2003E-05 (103)
18	5.2006E-05 (103)	5.2001E-05 (103)	5.2001E-05 (103)	5.2000E-05 (103)	5.2000E-05 (103)
19	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)
20	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)
21	5.2000E-05 (267)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)	5.2000E-05 (335)
22	5.2268E-05 (267)	5.2544E-05 (267)	5.2446E-05 (267)	5.2256E-05 (267)	5.2086E-05 (267)
23	5.9811E-05 (267)	9.1657E-05 (267)	1.0918E-04 (267)	1.1421E-04 (267)	1.0555E-04 (267)
24	6.1374E-05 (267)	1.0276E-04 (267)	1.1539E-04 (267)	1.1474E-04 (267)	1.0211E-04 (267)
25	6.7707E-05 (267)	1.3142E-04 (267)	1.4870E-04 (267)	1.4643E-04 (267)	1.3006E-04 (267)
26	7.8973E-05 (187)	1.2357E-04 (267)	1.3771E-04 (267)	1.3466E-04 (267)	1.1861E-04 (267)
27	1.2669E-04 (187)	9.0138E-05 (187)	8.1739E-05 (267)	8.0526E-05 (267)	7.4887E-05 (267)
28	1.5688E-04 (187)	1.0756E-04 (187)	8.8242E-05 (187)	9.9117E-05 (177)	1.0724E-04 (177)
29	1.4776E-04 (187)	1.1389E-04 (188)	1.3020E-04 (177)	1.4476E-04 (177)	1.4700E-04 (177)
30	1.5043E-04 (120)	1.4061E-04 (120)	1.5106E-04 (120)	1.4626E-04 (120)	1.3759E-04 (137)
31	1.5397E-04 (137)	1.5084E-04 (261)	1.5249E-04 (261)	1.4570E-04 (120)	1.2765E-04 (120)
32	1.2138E-04 (77)	1.4773E-04 (77)	1.5325E-04 (261)	1.4890E-04 (137)	1.3641E-04 (137)
33	8.5883E-05 (77)	6.6073E-05 (77)	6.0491E-05 (77)	5.7004E-05 (77)	5.4613E-05 (77)
34	7.3420E-05 (200)	9.1980E-05 (200)	1.1065E-04 (200)	1.1708E-04 (200)	1.0918E-04 (200)
35	1.3217E-04 (200)	1.1157E-04 (200)	1.0786E-04 (200)	1.0020E-04 (200)	8.7359E-05 (200)
36	1.6494E-04 (200)	1.3507E-04 (200)	1.5314E-04 (200)	1.5079E-04 (200)	1.3052E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
57	1.0598E-04	8	2.07
56	1.0438E-04	5	2.75
335	1.0432E-04	8	2.75
177	1.0398E-04	29	5.23
120	1.0213E-04	30	2.75
261	1.0179E-04	31	2.75
62	9.7857E-05	10	2.75
37	9.5799E-05	8	3.65
77	9.5770E-05	32	2.07
137	9.3158E-05	32	3.65
14	9.2511E-05	8	3.65
7	9.2072E-05	8	3.65
26	9.1033E-05	8	2.75
96	9.0934E-05	11	3.65
267	9.0701E-05	25	2.75
94	9.0078E-05	11	2.75
187	8.9386E-05	29	1.17
103	8.8216E-05	12	1.17
188	8.6331E-05	29	1.17
200	8.5093E-05	36	2.75

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT 1975

$NAM1
KSTL=4  IOR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAR= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     40.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 775.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	760.0	750.0	760.0	970.0	1300.0
2	760.0	750.0	1120.0	825.0	960.0
3	755.0	750.0	740.0	800.0	1000.0
4	750.0	750.0	740.0	1100.0	1100.0
5	750.0	750.0	740.0	900.0	1060.0
6	740.0	745.0	1020.0	1160.0	1000.0
7	780.0	780.0	920.0	1000.0	1100.0
8	820.0	920.0	880.0	1060.0	800.0
9	860.0	830.0	720.0	1000.0	960.0
10	890.0	740.0	720.0	800.0	920.0
11	920.0	720.0	760.0	960.0	1020.0
12	850.0	740.0	720.0	1070.0	1000.0
13	780.0	720.0	960.0	1060.0	1000.0
14	750.0	740.0	1150.0	1020.0	1080.0
15	740.0	900.0	1020.0	800.0	1020.0
16	730.0	800.0	1060.0	780.0	940.0
17	730.0	900.0	1020.0	1010.0	720.0
18	740.0	960.0	1020.0	1020.0	900.0
19	740.0	820.0	720.0	800.0	780.0
20	740.0	760.0	970.0	720.0	1040.0
21	730.0	720.0	980.0	720.0	750.0
22	760.0	780.0	920.0	800.0	980.0
23	760.0	860.0	1100.0	1040.0	1020.0
24	760.0	840.0	1100.0	950.0	760.0
25	760.0	760.0	820.0	1100.0	900.0
26	760.0	780.0	840.0	1140.0	740.0
27	760.0	800.0	1080.0	1140.0	800.0
28	760.0	900.0	1040.0	1100.0	1200.0
29	790.0	1060.0	890.0	900.0	1400.0
30	780.0	1160.0	1060.0	1060.0	1400.0
31	790.0	1080.0	1100.0	1100.0	1100.0
32	805.0	1120.0	1040.0	1040.0	1100.0
33	795.0	1140.0	1020.0	1020.0	1100.0
34	805.0	1010.0	1020.0	1000.0	1400.0
35	770.0	1020.0	830.0	1000.0	1500.0
36	755.0	760.0	800.0	1040.0	1600.0

STACK # 1--KINGSTON STACKS#1-4, NORMAL POWER LOAD-COAL NOX
STACK # 2--KINGSTON STACKS#5-9, NORMAL POWER LOAD-COAL NOX

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	410.00	0.00	76.70	4.27	10.90	416.00	156.09
2	NOM	720.00	0.00	91.44	5.03	10.50	414.00	208.65

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.07 1.08 1.24 1.13 1.07 1.04 0.91 0.74 0.83 0.88 0.93 1.07

YEAR BASED ON 365. DAYS

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 6.8886E-05 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1		5.72476E-05	5.57601E-05	5.24057E-05	4.77465E-05	4.47658E-05
2		5.81049E-05	5.50517E-05	5.07823E-05	4.74694E-05	4.51860E-05
3		5.96681E-05	5.63334E-05	5.25911E-05	4.96707E-05	4.69092E-05
4		6.00414E-05	5.66200E-05	5.18349E-05	4.82718E-05	4.59424E-05
5		5.67126E-05	5.37481E-05	5.01207E-05	4.74367E-05	4.54735E-05
6		5.07740E-05	4.85775E-05	4.61898E-05	4.46513E-05	4.38357E-05
7		4.62901E-05	4.51079E-05	4.38843E-05	4.28746E-05	4.22698E-05
8		4.44738E-05	4.36337E-05	4.28714E-05	4.25241E-05	4.19397E-05
9		4.41206E-05	4.30451E-05	4.20786E-05	4.17526E-05	4.13158E-05
10		4.43224E-05	4.31634E-05	4.21989E-05	4.18931E-05	4.14709E-05
11		4.43355E-05	4.31403E-05	4.21645E-05	4.18556E-05	4.13815E-05
12		4.45124E-05	4.32987E-05	4.26662E-05	4.28055E-05	4.22848E-05
13		4.54911E-05	4.39153E-05	4.30922E-05	4.29290E-05	4.20943E-05
14		4.79723E-05	4.57680E-05	4.44705E-05	4.40276E-05	4.29227E-05
15		5.16218E-05	4.85513E-05	4.68301E-05	4.62271E-05	4.42878E-05
16		5.43510E-05	5.13169E-05	5.20781E-05	5.25767E-05	4.86278E-05
17		5.26055E-05	4.98042E-05	4.78841E-05	4.69556E-05	4.50796E-05
18		4.78689E-05	4.60371E-05	4.44563E-05	4.32008E-05	4.21554E-05
19		4.43000E-05	4.33524E-05	4.24005E-05	4.16801E-05	4.12581E-05
20		4.31601E-05	4.29328E-05	4.22039E-05	4.13680E-05	4.09700E-05
21		4.36894E-05	4.40653E-05	4.35246E-05	4.26124E-05	4.18858E-05
22		4.45208E-05	4.53189E-05	4.49253E-05	4.38754E-05	4.31963E-05
23		4.45163E-05	4.56668E-05	4.55711E-05	4.42826E-05	4.35780E-05
24		4.35789E-05	4.47865E-05	4.50072E-05	4.39286E-05	4.32871E-05
25		4.25901E-05	4.35173E-05	4.38581E-05	4.33633E-05	4.27313E-05
26		4.21386E-05	4.27789E-05	4.26469E-05	4.17783E-05	4.13063E-05
27		4.21542E-05	4.28255E-05	4.28412E-05	4.21489E-05	4.19457E-05
28		4.21591E-05	4.28894E-05	4.28747E-05	4.20395E-05	4.15889E-05
29		4.18224E-05	4.24603E-05	4.23261E-05	4.16148E-05	4.13186E-05
30		4.13683E-05	4.19500E-05	4.21466E-05	4.15513E-05	4.12004E-05
31		4.10830E-05	4.14298E-05	4.17631E-05	4.14644E-05	4.11690E-05
32		4.13727E-05	4.14260E-05	4.12313E-05	4.08652E-05	4.06726E-05
33		4.28874E-05	4.30794E-05	4.25464E-05	4.16649E-05	4.12372E-05
34		4.57259E-05	4.65389E-05	4.58092E-05	4.36186E-05	4.24225E-05
35		4.88620E-05	4.98765E-05	4.85847E-05	4.57436E-05	4.41836E-05
36		6.88864E-05	6.86292E-05	6.30874E-05	5.41539E-05	4.83723E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 4.499BE-04 DIRECTION=360. DISTANCE= 1.3 KM DAY=315.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.5059E-04 (298)	1.8033E-04 (315)	1.4691E-04 (284)	1.1455E-04 (262)	8.4835E-05 (341)
2	3.0439E-04 (298)	2.2542E-04 (326)	1.6130E-04 (326)	1.2271E-04 (37)	1.3067E-04 (234)
3	2.7411E-04 (293)	1.9061E-04 (276)	1.7041E-04 (255)	2.2637E-04 (262)	1.7213E-04 (234)
4	3.0010E-04 (292)	2.1460E-04 (292)	1.6502E-04 (260)	1.7666E-04 (260)	1.1974E-04 (260)
5	3.2297E-04 (340)	2.4534E-04 (340)	1.6759E-04 (340)	1.9012E-04 (139)	1.3323E-04 (139)
6	2.4758E-04 (330)	1.7168E-04 (340)	1.3381E-04 (187)	1.0430E-04 (238)	9.8850E-05 (238)
7	1.8482E-04 (330)	1.2889E-04 (306)	1.0786E-04 (174)	1.1633E-04 (174)	8.8778E-05 (174)
8	2.1177E-04 (306)	1.5690E-04 (322)	1.2215E-04 (140)	1.8754E-04 (140)	1.8366E-04 (140)
9	2.3905E-04 (295)	1.3779E-04 (322)	1.0412E-04 (243)	1.0066E-04 (174)	9.3181E-05 (140)
10	2.3876E-04 (295)	1.4874E-04 (280)	1.3307E-04 (1)	1.2437E-04 (1)	1.0863E-04 (140)
11	2.1936E-04 (295)	2.2759E-04 (280)	1.7178E-04 (280)	1.2235E-04 (280)	9.8286E-05 (280)
12	2.0543E-04 (295)	1.9141E-04 (280)	1.5037E-04 (280)	1.5216E-04 (280)	1.3506E-04 (280)
13	2.2612E-04 (307)	1.7743E-04 (307)	1.3017E-04 (287)	1.8130E-04 (287)	1.4285E-04 (287)
14	2.5364E-04 (307)	1.8697E-04 (307)	1.5214E-04 (167)	1.7359E-04 (167)	1.5051E-04 (192)
15	2.9763E-04 (342)	1.9736E-04 (342)	1.5151E-04 (222)	1.4622E-04 (167)	1.3383E-04 (193)
16	3.7400E-04 (331)	2.7671E-04 (331)	2.7525E-04 (241)	3.4398E-04 (241)	2.3873E-04 (241)
17	3.2037E-04 (332)	2.5400E-04 (359)	2.0265E-04 (359)	2.3846E-04 (204)	1.7289E-04 (204)
18	2.5859E-04 (332)	1.8237E-04 (332)	1.1937E-04 (252)	1.1851E-04 (252)	9.3973E-05 (252)
19	1.7009E-04 (338)	1.3435E-04 (360)	9.0158E-05 (252)	1.0110E-04 (333)	8.4665E-05 (333)
20	1.4833E-04 (338)	1.1887E-04 (360)	8.8952E-05 (193)	6.9800E-05 (193)	6.2002E-05 (119)
21	1.6760E-04 (152)	1.8812E-04 (30)	1.6697E-04 (30)	1.1922E-04 (30)	8.7848E-05 (29)
22	2.3448E-04 (152)	1.6930E-04 (152)	1.4036E-04 (30)	1.2789E-04 (30)	1.2638E-04 (282)
23	1.9847E-04 (152)	1.6654E-04 (314)	1.3796E-04 (317)	1.1764E-04 (282)	1.5138E-04 (282)
24	1.8613E-04 (302)	2.1612E-04 (302)	1.6445E-04 (302)	1.2129E-04 (302)	1.0172E-04 (361)
25	1.5737E-04 (302)	1.7175E-04 (302)	1.2318E-04 (302)	1.3105E-04 (363)	1.5486E-04 (208)
26	1.3520E-04 (317)	1.2450E-04 (317)	9.7498E-05 (317)	7.2242E-05 (317)	6.5935E-05 (21)
27	1.3326E-04 (314)	1.2420E-04 (314)	1.0889E-04 (350)	8.9931E-05 (317)	1.0052E-04 (349)
28	1.6614E-04 (314)	1.5856E-04 (314)	1.2383E-04 (312)	9.5673E-05 (312)	6.9418E-05 (25)
29	1.3246E-04 (314)	1.2375E-04 (314)	9.8211E-05 (334)	8.7504E-05 (125)	7.4869E-05 (349)
30	1.0125E-04 (33)	1.0878E-04 (33)	1.0002E-04 (297)	7.3027E-05 (297)	6.3786E-05 (304)
31	1.1074E-04 (179)	1.0137E-04 (33)	9.8170E-05 (285)	7.8230E-05 (285)	8.1987E-05 (349)
32	1.1824E-04 (179)	9.3497E-05 (179)	6.8886E-05 (334)	5.9284E-05 (135)	6.5523E-05 (304)
33	1.0724E-04 (179)	9.5073E-05 (48)	9.3493E-05 (107)	8.1700E-05 (107)	7.2386E-05 (16)
34	1.2790E-04 (42)	1.2300E-04 (297)	1.3661E-04 (16)	1.0751E-04 (16)	8.3540E-05 (16)
35	1.6055E-04 (269)	1.3714E-04 (269)	1.2067E-04 (16)	9.0541E-05 (31)	9.6639E-05 (22)
36	4.3939E-04 (319)	4.4998E-04 (315)	3.0541E-04 (315)	1.7000E-04 (356)	1.0955E-04 (116)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.7445E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.1636E-03 (321)	7.7869E-04 (262)	6.0299E-04 (341)	5.5171E-04 (341)	3.9856E-04 (341)
2	1.2675E-03 (293)	8.7727E-04 (324)	5.7088E-04 (341)	6.3817E-04 (341)	6.3451E-04 (234)
3	1.1015E-03 (255)	8.0308E-04 (276)	5.8634E-04 (294)	7.6809E-04 (294)	6.7359E-04 (234)
4	1.3121E-03 (292)	7.9902E-04 (6)	5.5210E-04 (260)	5.1494E-04 (260)	3.3986E-04 (161)
5	1.2531E-03 (325)	7.8439E-04 (275)	5.0781E-04 (301)	5.6330E-04 (139)	4.5596E-04 (141)
6	1.0619E-03 (320)	7.0050E-04 (320)	4.6614E-04 (187)	5.5180E-04 (238)	5.1066E-04 (238)
7	8.8137E-04 (253)	5.7873E-04 (322)	4.8079E-04 (207)	4.2894E-04 (209)	3.1384E-04 (209)
8	1.0626E-03 (295)	8.0251E-04 (322)	4.5095E-04 (180)	6.2968E-04 (214)	4.4209E-04 (140)
9	1.1879E-03 (295)	6.4320E-04 (322)	3.6683E-04 (322)	4.8297E-04 (174)	4.3608E-04 (174)
10	1.0775E-03 (295)	6.6850E-04 (236)	3.8836E-04 (306)	4.6827E-04 (1)	3.9523E-04 (1)
11	1.1486E-03 (301)	7.3216E-04 (280)	4.9579E-04 (280)	4.6804E-04 (330)	3.5261E-04 (209)
12	1.0401E-03 (301)	6.3761E-04 (280)	4.4353E-04 (280)	4.0139E-04 (217)	4.0841E-04 (280)
13	9.2401E-04 (291)	6.3134E-04 (291)	4.4670E-04 (295)	4.9636E-04 (287)	5.0684E-04 (192)
14	1.1817E-03 (290)	7.9601E-04 (290)	4.9301E-04 (251)	6.3743E-04 (251)	4.4464E-04 (251)
15	9.7163E-04 (309)	6.5085E-04 (217)	6.2871E-04 (240)	6.2069E-04 (217)	4.8161E-04 (193)
16	1.1976E-03 (331)	7.0977E-04 (256)	5.8834E-04 (230)	7.3108E-04 (283)	5.0467E-04 (283)
17	1.0352E-03 (190)	8.3957E-04 (359)	6.3901E-04 (359)	6.0211E-04 (231)	4.7255E-04 (342)
18	1.0178E-03 (353)	7.1200E-04 (281)	5.1148E-04 (281)	4.2785E-04 (252)	3.6236E-04 (20)
19	9.7045E-04 (338)	6.2386E-04 (338)	3.5676E-04 (281)	4.8869E-04 (333)	3.7888E-04 (333)
20	8.8681E-04 (338)	5.5731E-04 (338)	3.7826E-04 (280)	2.3694E-04 (347)	2.0092E-04 (358)
21	8.2777E-04 (333)	7.4608E-04 (333)	6.9263E-04 (30)	4.0832E-04 (29)	3.7408E-04 (29)
22	9.3911E-04 (152)	7.3000E-04 (206)	5.7163E-04 (232)	4.3570E-04 (282)	5.7653E-04 (282)
23	9.5230E-04 (343)	7.2972E-04 (314)	5.9306E-04 (232)	4.8305E-04 (282)	5.9864E-04 (282)
24	8.0401E-04 (302)	7.9942E-04 (302)	5.7354E-04 (302)	4.5661E-04 (127)	4.9873E-04 (283)
25	7.0620E-04 (302)	6.6417E-04 (302)	4.2190E-04 (302)	5.3746E-04 (363)	5.3433E-04 (363)
26	6.7578E-04 (317)	5.6987E-04 (317)	4.1061E-04 (265)	2.2271E-04 (349)	2.4726E-04 (21)
27	6.2094E-04 (314)	5.4677E-04 (314)	5.2002E-04 (350)	3.1594E-04 (350)	3.6069E-04 (349)
28	8.3227E-04 (314)	7.5728E-04 (314)	5.1399E-04 (312)	3.4486E-04 (312)	2.6165E-04 (232)
29	6.2094E-04 (314)	5.6260E-04 (334)	4.0071E-04 (334)	3.1084E-04 (125)	3.1890E-04 (349)
30	5.2998E-04 (33)	5.8175E-04 (33)	3.9278E-04 (285)	2.8725E-04 (46)	2.3029E-04 (304)
31	5.5634E-04 (179)	5.2746E-04 (33)	5.0427E-04 (285)	3.4569E-04 (285)	3.7589E-04 (349)
32	6.4226E-04 (179)	4.2114E-04 (179)	2.6585E-04 (334)	1.9427E-04 (135)	2.4418E-04 (304)
33	5.7532E-04 (179)	4.8059E-04 (48)	3.8041E-04 (107)	2.3499E-04 (334)	2.2771E-04 (311)
34	7.3416E-04 (42)	6.6360E-04 (48)	5.1362E-04 (16)	3.3369E-04 (16)	3.2147E-04 (289)
35	8.9454E-04 (269)	7.1951E-04 (269)	5.4628E-04 (16)	3.2311E-04 (168)	3.9699E-04 (289)
36	1.7445E-03 (308)	1.3084E-03 (319)	8.9422E-04 (356)	5.7601E-04 (183)	4.3497E-04 (186)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
315	4.4998E-04	36	1.33
319	4.3939E-04	36	0.71
308	4.0731E-04	36	0.71
331	3.7400E-04	16	0.71
356	3.7232E-04	36	1.33
227	3.4960E-04	16	0.71
241	3.4398E-04	16	4.65
284	3.3629E-04	36	0.71
355	3.3211E-04	36	1.33
340	3.2297E-04	5	0.71
342	3.2160E-04	16	0.71
332	3.2037E-04	17	0.71
231	3.1657E-04	16	0.71
218	3.0613E-04	16	0.71
354	3.0606E-04	36	0.71
298	3.0439E-04	2	0.71
292	3.0010E-04	4	0.71
321	2.8991E-04	36	0.71
17	2.8826E-04	36	0.71
185	2.8635E-04	36	0.71

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

STACK # 1--KINGSTON STACKS#1-4, MAX.LOAD COAL NOX
STACK # 2--KINGSTON STACKS#5-9, MAX.LOAD COAL NOX

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	577.00	0.00	76.20	4.27	14.26	427.40	204.20
2	NOM	905.00	0.00	91.44	5.03	13.66	421.90	271.44

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IMO= 6 JDAY=168
ISTAB= 4 4 4 4 4 4 4 4 4 3 2 1 1 1 3 3 3 4 4 4 4 4 4 4
AWS= 2.9 1.2 1.3 2.5 0.9 1.7 1.5 1.1 0.8 1.6 3.0 4.0 4.4 5.9 7.0 6.9 7.1 7.3 7.2 6.6 5.6 5.9 5.9 4.7
TEMP= 292. 292. 291. 291. 290. 290. 290. 290. 292. 294. 296. 298. 300. 301. 302. 302. 303. 303. 303. 302. 300. 299. 298. 296.
AFV= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 9. 30. 29. 30. 27. 25. 11. 26. 29. 51.
AFVR= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 9. 30. 29. 30. 27. 25. 11. 26. 29. 51.
HLHI= 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2058. 1982. 1906. 1830. 1754.
1678. 1602. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.

JYR=75 IMO=12 JDAY=336
ISTAB= 4 4 4 4 4 4 4 4 4 1 1 1 1 1 1 2 3 4 4 4 4 4 4 4
AWS= 2.6 2.2 1.6 1.3 1.0 1.0 0.9 0.5 0.9 1.8 2.0 2.8 3.3 3.8 3.8 3.7 3.7 4.4 4.4 3.8 3.9 3.8 2.7 3.0
TEMP= 273. 272. 271. 271. 270. 270. 270. 269. 270. 272. 275. 279. 281. 282. 284. 284. 284. 283. 281. 279. 277. 277. 275. 275.
AFV= 208. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 8. 39. 38. 20. 15. 54. 60. 46. 53. 83.
AFVR= 208. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 8. 39. 38. 20. 15. 54. 60. 46. 53. 83.
HLHI= 305. 305. 305. 305. 305. 305. 305. 381. 457. 533. 609. 685.
761. 837. 914. 914. 914. 914. 914. 914. 914. 914. 914. 914.

JYR=76 IMO= 1 JDAY= 4
ISTAB= 3 3 4 3 3 4 4 4 3 1 1 1 1 1 1 1 3 4 4 4 4 4 4 4
AWS= 5.0 7.2 7.6 7.3 8.7 7.9 7.7 6.4 6.1 5.4 6.2 7.5 6.2 5.7 6.3 6.4 5.9 6.4 6.7 8.1 8.6 7.1 6.2 6.0
TEMP= 272. 271. 270. 270. 268. 267. 266. 266. 266. 266. 267. 267. 268. 269. 270. 270. 270. 269. 268. 267. 267. 266. 266. 265.
AFV= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
AFVR= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
HLHI= 400. 400. 400. 400. 400. 400. 400. 438. 476. 514. 552. 590.
628. 666. 710. 710. 710. 710. 710. 710. 710. 710. 710. 710.

JYR=76 IMO= 1 JDAY= 8
ISTAB= 4 4 3 3 3 3 3 3 3 2 1 1 1 1 1 1 2 3 3 4 3 4 4 4
AWS= 7.2 8.0 10.6 11.0 10.3 11.2 10.7 8.2 9.6 9.3 9.2 9.0 6.6 6.9 6.9 7.5 7.2 7.7 5.8 5.9 5.8 6.8 6.1 5.1
TEMP= 276. 275. 274. 272. 271. 270. 269. 268. 268. 267. 267. 268. 267. 267. 267. 266. 266. 265. 264. 264. 264. 263. 262. 262.
AFV= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
AFVR= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
HLHI= 853. 853. 853. 853. 853. 853. 853. 868. 883. 898. 913. 928.
943. 958. 975. 975. 975. 975. 975. 975. 975. 975. 975. 975.

```
JYR=76 IHO= 1 JDAY= 17
ISTAR=  3    3    3    3    3    3    3    3    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS= 10.1  8.7 10.6  9.3  7.2  8.9 10.2  8.9  7.7  8.2 10.2 10.6 10.5 10.1 10.2  9.1  8.1  8.1  6.1  5.7  6.1  5.5  4.6  5.7
TEMP= 273. 272. 272. 271. 270. 270. 269. 267. 267. 267. 267. 268. 268. 268. 268. 268. 267. 267. 267. 267. 266. 266. 265. 265.
AFV=  164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
AFVR= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
HLHI=  400.  400.  400.  400.  400.  400.  400.  427.  454.  481.  508.  535.
       562.  589.  617.  617.  617.  617.  617.  617.  617.  617.  617.  617.


JYR=76 IHO= 1 JDAY= 27
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    3    1    1    1    3    3    4    4    4    4    4    4
AWS=  6.4  5.2  6.4  7.2  7.6  8.0  8.1  8.0  8.8  8.4  8.1  7.5  8.2  7.5  9.1  6.7  8.0  7.2  5.7  3.9  2.8  2.3  4.2  6.3
TEMP= 275. 275. 275. 274. 274. 274. 274. 274. 273. 273. 273. 273. 273. 273. 273. 273. 272. 272. 272. 272. 271. 271. 270. 270.
AFV=  170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
AFVR= 170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
HLHI=  457.  457.  457.  457.  457.  457.  457.  521.  585.  649.  713.  777.
       841.  905.  975.  975.  975.  975.  975.  975.  975.  975.  975.  975.


JYR=76 IHO= 3 JDAY= 70
ISTAR=  4    4    4    4    4    4    4    4    3    3    3    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.1  4.3  4.1  3.5  3.6  4.4  3.3  2.7  1.4  0.9  1.7  2.4  2.6  2.6  2.5  4.0  4.4  3.8  3.9  3.8  1.2  1.0  0.5  0.7
TEMP= 276. 276. 275. 275. 274. 273. 273. 273. 274. 276. 278. 281. 283. 284. 285. 287. 287. 287. 286. 285. 283. 282. 280. 279.
AFV=  155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
AFVR= 155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IHO= 3 JDAY= 78
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    2    3    3    4    4    4    4    4    4
AWS=  1.5  2.7  3.3  2.5  2.0  2.7  3.2  3.9  3.2  4.8  4.4  4.5  5.0  6.3  6.0  6.3  6.9  5.6  5.9  6.7  6.8  6.8  5.1  4.8
TEMP= 273. 272. 271. 271. 271. 271. 271. 271. 273. 278. 282. 285. 288. 289. 291. 291. 291. 290. 289. 288. 288. 287. 286. 284.
AFV=  268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
AFVR= 268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
HLHI=    0.    0.    0.    0.    0.    0.    0.  228.  456.  684.  912. 1140.
      1368. 1596. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829.


JYR=76 IHO= 3 JDAY= 84
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  3.5  3.9  4.3  4.6  3.5  3.7  1.8  1.6  2.3  3.2  6.4  6.5  7.0  7.7  7.3  7.4  8.5  6.5  6.9  5.3  5.5  6.7  5.1
TEMP= 279. 278. 277. 276. 276. 275. 275. 275. 278. 284. 287. 289. 291. 291. 293. 293. 293. 293. 291. 291. 291. 289. 286. 285.
AFV=   61.  49.  51.  51.  48.  52.  53.  57.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
AFVR=  61.  49.  51.  51.  48.  52.  53.  57.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0. 1249. 2498. 3747. 4996. 6245.
      7494. 8743. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999.


JYR=76 IHO= 4 JDAY= 94
ISTAR=  4    4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  1.8  1.3  0.9  1.6  1.6  1.6  0.6  0.4  0.9  1.5  2.2  2.7  4.2  5.3  5.6  5.1  5.6  4.9  5.1  5.9  6.6  5.9  7.6  5.9
TEMP= 281. 280. 279. 278. 277. 277. 276. 277. 280. 284. 289. 292. 295. 296. 298. 298. 298. 298. 297. 295. 293. 292. 291. 290.
AFV=   52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
AFVR=  52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
HLHI=  400.  400.  400.  400.  400.  400.  400.  400.  537.  674.  811.  948. 1085.
      1722. 1359. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499.
```

JYR=76 IHO= 4 JDAY=101
ISTAB= 4 4 4 4 4 4 4 4 2 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 4.5 4.1 5.1 4.1 3.9 3.5 3.3 3.0 2.5 2.4 2.3 2.5 2.1 2.9 3.0 3.3 3.4 3.6 3.7 3.7 3.9 3.8 3.0 4.1
TEMP= 279. 277. 276. 276. 275. 274. 274. 275. 279. 283. 286. 287. 289. 290. 291. 293. 293. 293. 293. 291. 288. 286. 284. 283.
AFV= 185. 192. 219. 224. 231. 243. 243. 244. 244. 254. 292. 5. 3. 7. 5. 8. 4. 10. 36. 43. 48. 70. 71. 55.
AFVR= 186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292. 5. 3. 7. 5. 8. 4. 10. 36. 43. 48. 70. 71. 55.
HLHI= 0. 0. 0. 0. 0. 0. 0. 186. 372. 558. 744. 930.
1116. 1302. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493.

JYR=76 IHO= 4 JDAY=105
ISTAB= 4 4 4 4 4 4 4 2 4 2 1 1 1 1 2 1 1 2 4 4 4 4 4 4
AWS= 2.6 1.8 1.5 1.9 1.3 1.3 0.7 1.2 0.8 1.1 2.0 2.9 3.6 3.9 2.5 3.6 3.3 3.3 3.8 4.8 5.4 5.3 3.7 3.5
TEMP= 283. 283. 282. 280. 280. 280. 280. 281. 284. 288. 292. 295. 296. 297. 298. 299. 299. 298. 297. 295. 294. 293. 292. 291.
AFV= 124. 176. 214. 205. 60. 55. 43. 220. 211. 320. 7. 2. 2. 8. 10. 11. 8. 49. 58. 56. 72. 68. 74. 54.
AFVR= 124. 176. 214. 205. 60. 55. 43. 220. 211. 320. 7. 2. 2. 8. 10. 11. 8. 49. 58. 56. 72. 68. 74. 54.
HLHI= 0. 0. 0. 0. 0. 0. 0. 266. 532. 798. 1064. 1330.
1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.

JYR=76 IHO= 4 JDAY=107
ISTAB= 4 4 4 4 4 4 4 4 1 1 1 1 1 1 1 1 1 3 3 4 4 4 4 4 4
AWS= 3.4 3.6 3.6 2.5 1.2 0.8 0.6 2.2 2.3 2.4 3.9 6.1 6.4 5.5 4.1 4.3 4.0 2.8 3.6 4.2 3.3 3.3 4.0 4.3
TEMP= 288. 287. 286. 286. 286. 285. 285. 286. 289. 293. 295. 297. 298. 298. 299. 299. 298. 298. 297. 295. 293. 292. 291. 289.
AFV= 58. 62. 54. 40. 11. 332. 2. 87. 80. 64. 54. 16. 46. 11. 12. 14. 32. 53. 60. 43. 40. 49. 35. 32.
AFVR= 58. 62. 54. 40. 11. 332. 2. 87. 80. 64. 54. 16. 46. 11. 12. 14. 32. 53. 60. 43. 40. 49. 35. 32.
HLHI= 244. 744. 244. 244. 244. 244. 244. 491. 738. 985. 1232. 1479.
1726. 1973. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225.

JYR=76 IHO= 4 JDAY=117
ISTAB= 3 3 3 3 3 3 3 3 3 2 2 1 1 1 1 1 1 1 4 4 4 4 4 4
AWS= 5.6 6.3 4.3 4.8 5.1 5.2 4.8 5.1 4.2 4.3 3.7 4.2 5.7 6.4 5.9 4.6 5.1 5.9 4.3 4.2 4.5 1.9 1.7 2.3
TEMP= 282. 281. 281. 280. 280. 279. 278. 279. 279. 279. 279. 280. 281. 282. 283. 284. 285. 285. 284. 283. 282. 280. 279. 278.
AFV= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
AFVR= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
HLHI= 457. 457. 457. 457. 457. 457. 457. 590. 723. 856. 989. 1122.
1255. 1388. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.

JYR=76 IHO= 4 JDAY=118
ISTAB= 4 4 4 4 4 4 4 3 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 2.3 2.7 3.6 3.4 4.3 5.2 4.3 2.5 2.1 2.4 5.0 5.1 3.8 4.4 5.4 5.4 6.3 7.3 6.1 6.3 5.7 5.8 4.7 3.5
TEMP= 277. 277. 276. 276. 275. 275. 275. 277. 280. 282. 284. 286. 287. 288. 289. 290. 290. 289. 288. 287. 286. 285. 283. 283.
AFV= 226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
AFVR= 226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
HLHI= 914. 914. 914. 914. 914. 914. 914. 952. 990. 1028. 1066. 1104.
1142. 1180. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219.

JYR=76 IHO= 5 JDAY=126
ISTAB= 4 4 4 4 4 4 4 4 2 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 2.0 1.7 1.2 1.5 1.3 0.9 0.4 0.9 1.1 2.9 3.7 4.8 4.3 5.2 5.1 4.6 5.3 4.8 5.6 6.3 6.4 5.8 4.1 4.4
TEMP= 280. 279. 279. 278. 278. 278. 278. 280. 284. 287. 290. 292. 294. 295. 296. 297. 297. 296. 296. 294. 293. 290. 289. 290.
AFV= 42. 67. 40. 37. 49. 125. 177. 76. 11. 43. 55. 28. 55. 55. 58. 59. 57. 55. 51. 53. 45. 12. 11. 10.
AFVR= 42. 67. 40. 37. 49. 125. 177. 76. 11. 43. 55. 28. 55. 55. 58. 59. 57. 55. 51. 53. 45. 12. 11. 10.
HLHI= 0. 0. 0. 0. 0. 0. 0. 156. 312. 468. 624. 780.
936. 1092. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.

```
JYR=76 IHO= 5 JDAY=139
ISTAR=  4    4    4    4    4    4    4    4    3    2    2    1    1    1    1    1    1    1    3    3    4    3    3    3
AWS=  1.9  2.7  3.3  4.0  4.1  3.8  3.3  2.8  2.0  1.5  3.2  3.3  3.9  5.9  5.6  5.9  6.4  7.2  7.2  7.8  8.4  6.4  5.4  2.8
TEMP= 290. 290. 290. 290. 290. 290. 290. 290. 291. 291. 292. 292. 293. 292. 292. 291. 289. 287. 286. 285. 285. 284. 284. 284.
AFV=   66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
AFVR=  66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
HLHI=  762.  762.  762.  762.  762.  762.  762.  800.  838.  876.  914.  952.
       990. 1028. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067.


JYR=76 IHO= 5 JDAY=140
ISTAR=  4    4    4    4    4    4    4    2    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  2.4  1.9  2.4  3.2  1.6  2.1  2.8  0.5  0.8  1.3  1.7  1.7  3.7  3.3  3.7  3.7  3.8  3.5  4.7  4.2  4.9  4.7  4.1  2.8
TEMP= 281. 280. 279. 279. 279. 278. 278. 281. 284. 287. 289. 290. 291. 292. 293. 294. 294. 294. 293. 292. 290. 288. 286. 285.
AFV=  177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
AFVR= 177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
HLHI=   40.   40.   40.   40.   40.   40.   40.  225.  410.  595.  780.  965.
      1150. 1335. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527.


JYR=76 IHO= 5 JDAY=141
ISTAR=  4    4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  2.1  1.9  1.9  0.9  1.2  1.2  0.7  0.9  1.3  2.6  3.1  3.0  2.9  3.1  2.3  3.1  3.1  3.2  4.4  4.7  3.6  2.3  2.7
TEMP= 283. 283. 282. 281. 280. 280. 280. 282. 286. 289. 292. 293. 294. 295. 296. 297. 297. 297. 297. 295. 292. 290. 289. 288.
AFV=  106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
AFVR= 106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
HLHI=    0.    0.    0.    0.    0.    0.    0.  190.  380.  570.  760.  950.
      1140. 1330. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IHO= 5 JDAY=142
ISTAR=  4    4    4    4    4    4    4    4    2    2    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS=  2.5  2.2  2.6  2.5  1.6  0.7  0.5  0.8  0.8  1.1  2.2  2.0  2.7  2.9  2.5  2.9  2.2  3.0  2.5  2.0  4.8  3.3  3.1  3.8
TEMP= 286. 286. 285. 285. 284. 283. 283. 285. 288. 291. 294. 296. 297. 298. 298. 299. 299. 299. 298. 297. 294. 293. 291. 290.
AFV=   84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
AFVR=  84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
HLHI=    0.    0.    0.    0.    0.    0.    0.  171.  342.  513.  684.  855.
      1026. 1197. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372.

YEAR BASED ON  20. DAYS
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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOX--SO2

MAXIMUM MEAN CONC= 1.02768E-04 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.07735E-04	9.61796E-05	8.11002E-05	6.14524E-05	5.08788E-05
2	9.23963E-05	7.85008E-05	6.67036E-05	5.59596E-05	4.84864E-05
3	8.23105E-05	6.83681E-05	5.85583E-05	5.12695E-05	4.76589E-05
4	8.08763E-05	6.75534E-05	5.68875E-05	4.83472E-05	4.47208E-05
5	7.54157E-05	6.44098E-05	5.48787E-05	4.88174E-05	4.67087E-05
6	6.04193E-05	5.34710E-05	4.79517E-05	4.39000E-05	4.19881E-05
7	4.69966E-05	4.41195E-05	4.21906E-05	4.09660E-05	4.04258E-05
8	4.13729E-05	4.06746E-05	4.02685E-05	4.01303E-05	4.05517E-05
9	4.01512E-05	4.00576E-05	4.00190E-05	4.00060E-05	4.00013E-05
10	4.00301E-05	4.00105E-05	4.02529E-05	4.10531E-05	4.11080E-05
11	4.02409E-05	4.00881E-05	4.00307E-05	4.00169E-05	4.00054E-05
12	4.16879E-05	4.07101E-05	4.03629E-05	4.10395E-05	4.14786E-05
13	4.82417E-05	4.38059E-05	4.21235E-05	4.35180E-05	4.34665E-05
14	6.87419E-05	5.46209E-05	4.70570E-05	4.58479E-05	4.54090E-05
15	1.07789E-04	7.92900E-05	6.24659E-05	5.45014E-05	4.94054E-05
16	1.36857E-04	1.01568E-04	9.25561E-05	9.10426E-05	7.54271E-05
17	1.18586E-04	8.72983E-05	7.31445E-05	6.54186E-05	5.74634E-05
18	7.97914E-05	6.18659E-05	5.30376E-05	4.71413E-05	4.37863E-05
19	5.38675E-05	4.74512E-05	4.44485E-05	4.22033E-05	4.11137E-05
20	4.34450E-05	4.20295E-05	4.14108E-05	4.07096E-05	4.03452E-05
21	4.06042E-05	4.04049E-05	4.03427E-05	4.07829E-05	4.10681E-05
22	4.00716E-05	4.00571E-05	4.00350E-05	4.00144E-05	4.00048E-05
23	4.00055E-05	4.00054E-05	4.00103E-05	4.00052E-05	4.00012E-05
24	4.00013E-05	4.00225E-05	4.01931E-05	4.01948E-05	4.00949E-05
25	4.00047E-05	4.00569E-05	4.05536E-05	4.06808E-05	4.04210E-05
26	4.00261E-05	4.00596E-05	4.02303E-05	4.02112E-05	4.01007E-05
27	4.01192E-05	4.02138E-05	4.02696E-05	4.01493E-05	4.00678E-05
28	4.03020E-05	4.06019E-05	4.08393E-05	4.05340E-05	4.02874E-05
29	4.04119E-05	4.08519E-05	4.12382E-05	4.08251E-05	4.04678E-05
30	4.03034E-05	4.06024E-05	4.08393E-05	4.05340E-05	4.02874E-05
31	4.01441E-05	4.02240E-05	4.02648E-05	4.01454E-05	4.00668E-05
32	4.02736E-05	4.01826E-05	4.00949E-05	4.00312E-05	4.00097E-05
33	4.14910E-05	4.10187E-05	4.04987E-05	4.01589E-05	4.00518E-05
34	4.62111E-05	4.47566E-05	4.28370E-05	4.11583E-05	4.04331E-05
35	5.95923E-05	5.63557E-05	5.09102E-05	4.48616E-05	4.22398E-05
36	1.02257E-04	1.67364E-04	1.31387E-04	8.57650E-05	6.24051E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUN 24-HOUR CONC= 3.9528E-04 DIRECTION=160. DISTANCE= 0.7 KM DAY=319.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.3936E-04 (298)	1.6153E-04 (308)	1.5066E-04 (356)	1.0960E-04 (356)	8.5436E-05 (355)
2	2.9296E-04 (298)	1.7451E-04 (298)	1.0718E-04 (308)	1.0375E-04 (292)	8.5839E-05 (292)
3	2.5515E-04 (298)	1.6441E-04 (299)	1.1577E-04 (298)	8.8348E-05 (298)	6.9264E-05 (185)
4	2.7573E-04 (292)	1.9567E-04 (292)	1.3076E-04 (340)	8.5610E-05 (340)	6.3472E-05 (340)
5	3.3131E-04 (340)	2.4809E-04 (340)	1.7204E-04 (340)	1.2239E-04 (340)	9.0331E-05 (340)
6	2.4836E-04 (340)	1.7732E-04 (340)	1.1188E-04 (340)	7.0328E-05 (340)	5.4570E-05 (340)
7	1.2025E-04 (340)	8.5225E-05 (340)	5.9651E-05 (340)	4.7182E-05 (340)	4.3171E-05 (321)
8	5.6879E-05 (340)	4.7830E-05 (340)	4.2752E-05 (340)	4.1224E-05 (321)	5.0577E-05 (321)
9	4.1922E-05 (340)	4.0687E-05 (340)	4.0181E-05 (340)	4.0047E-05 (331)	4.0009E-05 (340)
10	4.0387E-05 (342)	4.0119E-05 (342)	4.5020E-05 (331)	6.1055E-05 (331)	6.2159E-05 (331)
11	4.3738E-05 (342)	4.1490E-05 (342)	4.0499E-05 (342)	4.0252E-05 (342)	4.0090E-05 (342)
12	6.0858E-05 (342)	4.9951E-05 (342)	4.5003E-05 (342)	5.3485E-05 (331)	6.4361E-05 (331)
13	1.1203E-04 (342)	7.8769E-05 (342)	6.0189E-05 (342)	8.0465E-05 (331)	8.4568E-05 (331)
14	2.0650E-04 (342)	1.3601E-04 (342)	8.5059E-05 (342)	8.1992E-05 (331)	8.7381E-05 (331)
15	3.1346E-04 (342)	2.0755E-04 (342)	1.4644E-04 (222)	1.5043E-04 (222)	1.1401E-04 (222)
16	3.8244E-04 (222)	2.6370E-04 (331)	2.3127E-04 (222)	3.4632E-04 (241)	2.6749E-04 (241)
17	3.1759E-04 (332)	2.2399E-04 (332)	1.6947E-04 (231)	1.6868E-04 (231)	1.2349E-04 (231)
18	2.5606E-04 (332)	1.7922E-04 (332)	1.1555E-04 (332)	7.5339E-05 (231)	6.3356E-05 (231)
19	1.5459E-04 (332)	1.1521E-04 (332)	8.3943E-05 (332)	6.0467E-05 (332)	5.0761E-05 (332)
20	8.1145E-05 (332)	6.9060E-05 (332)	5.9364E-05 (332)	4.9478E-05 (332)	4.4857E-05 (332)
21	4.9303E-05 (332)	4.7005E-05 (332)	4.4878E-05 (332)	5.2968E-05 (331)	6.0203E-05 (331)
22	4.1287E-05 (332)	4.0982E-05 (332)	4.0630E-05 (332)	4.0238E-05 (332)	4.0084E-05 (332)
23	4.0107E-05 (332)	4.0076E-05 (332)	4.0166E-05 (315)	4.0092E-05 (315)	4.0022E-05 (315)
24	4.0021E-05 (315)	4.0447E-05 (315)	4.3860E-05 (315)	4.3896E-05 (315)	4.1898E-05 (315)
25	4.0094E-05 (315)	4.1138E-05 (315)	5.1072E-05 (315)	5.3616E-05 (315)	4.8419E-05 (315)
26	4.0522E-05 (315)	4.1192E-05 (315)	4.4606E-05 (315)	4.4224E-05 (315)	4.2014E-05 (315)
27	4.2383E-05 (315)	4.4277E-05 (315)	4.5391E-05 (315)	4.2985E-05 (315)	4.1355E-05 (315)
28	4.6040E-05 (315)	5.2038E-05 (315)	5.6785E-05 (315)	5.0679E-05 (315)	4.5749E-05 (315)
29	4.8237E-05 (315)	5.7037E-05 (315)	6.4764E-05 (315)	5.6502E-05 (315)	4.9356E-05 (315)
30	4.6040E-05 (315)	5.2037E-05 (315)	5.6784E-05 (315)	5.0679E-05 (315)	4.5749E-05 (315)
31	4.2381E-05 (315)	4.4245E-05 (315)	4.5226E-05 (315)	4.2894E-05 (315)	4.1333E-05 (315)
32	4.2895E-05 (17)	4.1466E-05 (17)	4.0754E-05 (315)	4.0329E-05 (315)	4.0117E-05 (315)
33	5.5409E-05 (17)	4.9244E-05 (17)	4.4681E-05 (355)	4.1635E-05 (355)	4.0593E-05 (355)
34	8.8400E-05 (17)	7.3230E-05 (17)	6.2445E-05 (17)	5.0053E-05 (17)	4.3606E-05 (17)
35	1.3517E-04 (17)	1.0704E-04 (17)	9.2136E-05 (17)	6.8257E-05 (17)	5.5294E-05 (17)
36	3.9528E-04 (319)	3.7773E-04 (315)	3.1948E-04 (356)	1.9674E-04 (356)	1.2312E-04 (356)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.7453E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.1471E-03 (321)	7.6670E-04 (321)	4.4710E-04 (315)	3.1334E-04 (355)	2.8910E-04 (355)
2	1.1548E-03 (298)	6.0896E-04 (298)	4.0348E-04 (308)	5.1958E-04 (292)	3.9526E-04 (292)
3	1.0514E-03 (298)	6.6469E-04 (298)	4.5424E-04 (298)	3.6427E-04 (298)	2.6325E-04 (185)
4	1.2179E-03 (292)	7.0738E-04 (292)	4.4717E-04 (292)	2.4838E-04 (292)	2.0076E-04 (284)
5	1.2142E-03 (340)	7.5560E-04 (340)	4.8517E-04 (340)	3.8155E-04 (340)	2.7386E-04 (340)
6	9.0100E-04 (340)	5.4559E-04 (340)	2.6974E-04 (321)	2.2623E-04 (321)	1.5125E-04 (321)
7	3.7945E-04 (340)	2.1831E-04 (340)	1.1700E-04 (321)	9.2834E-05 (321)	6.5221E-05 (321)
8	1.1196E-04 (340)	7.1389E-05 (340)	5.0191E-05 (340)	4.9765E-05 (321)	1.2461E-04 (321)
9	4.8201E-05 (340)	4.2758E-05 (340)	4.0670E-05 (340)	4.0374E-05 (331)	4.0057E-05 (331)
10	4.2997E-05 (342)	4.0914E-05 (342)	4.0157E-05 (331)	2.0844E-04 (331)	2.1727E-04 (331)
11	6.7791E-05 (342)	5.0869E-05 (342)	4.3224E-05 (342)	4.1174E-05 (342)	4.0443E-05 (342)
12	1.8472E-04 (342)	1.0725E-04 (342)	6.4247E-05 (342)	1.4768E-04 (331)	2.3485E-04 (331)
13	4.7954E-04 (342)	2.6567E-04 (342)	1.3105E-04 (342)	3.5867E-04 (331)	3.9521E-04 (331)
14	8.6224E-04 (342)	4.7950E-04 (342)	2.2529E-04 (342)	3.3418E-04 (331)	4.0442E-04 (331)
15	1.0476E-03 (342)	6.1430E-04 (241)	3.7345E-04 (222)	4.3269E-04 (222)	2.6939E-04 (222)
16	1.2339E-03 (331)	7.2831E-04 (342)	5.3054E-04 (331)	6.4059E-04 (241)	5.3708E-04 (241)
17	1.1001E-03 (218)	6.9665E-04 (332)	4.5777E-04 (231)	6.3543E-04 (231)	4.7388E-04 (342)
18	8.5302E-04 (332)	4.9135E-04 (332)	2.8208E-04 (332)	2.3860E-04 (231)	1.8469E-04 (231)
19	4.7396E-04 (332)	3.3986E-04 (332)	2.6783E-04 (332)	1.6198E-04 (332)	1.0743E-04 (332)
20	2.0295E-04 (332)	1.9399E-04 (332)	1.6646E-04 (332)	1.0732E-04 (332)	7.5522E-05 (332)
21	8.4535E-05 (332)	8.4213E-05 (332)	7.5496E-05 (332)	1.4369E-04 (331)	2.0161E-04 (331)
22	4.7202E-05 (332)	4.6897E-05 (332)	4.4822E-05 (332)	4.1869E-05 (332)	4.0661E-05 (332)
23	4.0684E-05 (332)	4.0567E-05 (332)	4.1325E-05 (315)	4.0733E-05 (315)	4.0174E-05 (315)
24	4.0168E-05 (315)	4.3580E-05 (315)	7.0883E-05 (315)	7.1169E-05 (315)	5.5181E-05 (315)
25	4.0753E-05 (315)	4.9104E-05 (315)	1.2857E-04 (315)	1.4893E-04 (315)	1.0735E-04 (315)
26	4.4178E-05 (315)	4.9535E-05 (315)	7.6850E-05 (315)	7.3793E-05 (315)	5.6115E-05 (315)
27	5.9065E-05 (315)	7.4215E-05 (315)	8.3131E-05 (315)	6.3882E-05 (315)	5.0840E-05 (315)
28	8.8318E-05 (315)	1.3630E-04 (315)	1.7428E-04 (315)	1.2543E-04 (315)	8.5988E-05 (315)
29	1.0589E-04 (315)	1.7630E-04 (315)	2.3811E-04 (315)	1.7202E-04 (315)	1.1485E-04 (315)
30	8.8318E-05 (315)	1.3630E-04 (315)	1.7428E-04 (315)	1.2543E-04 (315)	8.5988E-05 (315)
31	5.9049E-05 (315)	7.3961E-05 (315)	8.1807E-05 (315)	6.3150E-05 (315)	5.0666E-05 (315)
32	6.3152E-05 (17)	5.1705E-05 (17)	4.5998E-05 (315)	4.2631E-05 (315)	4.0934E-05 (315)
33	1.6296E-04 (17)	1.1223E-04 (17)	7.1679E-05 (355)	5.0741E-05 (355)	4.3923E-05 (355)
34	4.2406E-04 (17)	2.8148E-04 (17)	1.9912E-04 (17)	1.1444E-04 (17)	6.6853E-05 (17)
35	7.8144E-04 (17)	5.0899E-04 (17)	3.8853E-04 (17)	2.4315E-04 (17)	1.5115E-04 (17)
36	1.7453E-03 (308)	1.2236E-03 (354)	9.9855E-04 (356)	6.3908E-04 (356)	3.7257E-04 (356)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
319	3.952[illegible]E-04	36	0.71
308	3.9489E-04	36	0.71
222	3.8244E-04	16	0.71
315	3.7773E-04	36	1.33
331	3.727[illegible]E-04	16	0.71
231	3.5199E-04	16	0.71
241	3.4632E-04	16	4.65
342	3.3823E-04	16	0.71
340	3.3131E-04	5	0.71
218	3.2493E-04	16	0.71
356	3.194[illegible]E-04	36	2.49
332	3.1759E-04	17	0.71
17	3.0119E-04	36	0.71
355	2.9895E-04	36	1.33
298	2.9296E-04	2	0.71
354	2.9216E-04	36	0.71
321	2.9038E-04	36	0.71
292	2.7573E-04	4	0.71
185	2.7369E-04	36	0.71
284	2.7312E-04	36	0.71

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT 1975

&NAM1
KSTL=4  IHR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IDHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 1.0   TAF= 0.60   BACKGR=     40.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 775.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	760.0	750.0	760.0	970.0	1300.0
2	760.0	750.0	1120.0	825.0	960.0
3	755.0	750.0	740.0	800.0	1000.0
4	750.0	750.0	740.0	1100.0	1100.0
5	750.0	750.0	740.0	900.0	1060.0
6	740.0	745.0	1020.0	1160.0	1000.0
7	780.0	780.0	920.0	1000.0	1100.0
8	820.0	920.0	880.0	1060.0	800.0
9	860.0	830.0	720.0	1000.0	960.0
10	890.0	740.0	720.0	800.0	920.0
11	920.0	720.0	760.0	960.0	1020.0
12	850.0	740.0	720.0	1070.0	1000.0
13	780.0	720.0	960.0	1060.0	1000.0
14	750.0	740.0	1150.0	1020.0	1080.0
15	740.0	900.0	1020.0	800.0	1020.0
16	730.0	800.0	1060.0	780.0	940.0
17	730.0	900.0	1020.0	1010.0	720.0
18	740.0	960.0	1020.0	1020.0	900.0
19	740.0	820.0	720.0	800.0	780.0
20	740.0	760.0	970.0	720.0	1040.0
21	730.0	720.0	980.0	720.0	750.0
22	760.0	780.0	920.0	800.0	980.0
23	760.0	860.0	1100.0	1040.0	1020.0
24	760.0	840.0	1100.0	950.0	760.0
25	760.0	760.0	820.0	1100.0	900.0
26	760.0	780.0	840.0	1140.0	740.0
27	760.0	800.0	1080.0	1140.0	800.0
28	760.0	900.0	1040.0	1100.0	1200.0
29	780.0	1060.0	890.0	900.0	1400.0
30	780.0	1160.0	1060.0	1060.0	1400.0
31	790.0	1080.0	1100.0	1100.0	1100.0
32	805.0	1120.0	1040.0	1040.0	1100.0
33	795.0	1140.0	1020.0	1020.0	1100.0
34	805.0	1010.0	1020.0	1000.0	1400.0
35	770.0	1020.0	830.0	1000.0	1500.0
36	755.0	760.0	800.0	1040.0	1600.0

STACK # 1--KINGSTON STACKS#1-4, NORMAL POWER LOAD-SRC NOX
STACK # 2--KINGSTON STACK#5-9, NORMAL POWER LOAD-SRC NOX

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	402.00	0.00	76.20	4.27	10.90	416.00	156.09
2	NOM	705.00	0.00	91.44	5.03	10.50	414.00	208.65

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.07 1.08 1.24 1.13 1.07 1.04 0.91 0.74 0.83 0.88 0.93 1.07

YEAR BASED ON 365. DAYS

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 6.83020E-05 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1		5.68986E-05	5.54409E-05	5.21541E-05	4.75892E-05	4.46691E-05
2		5.77384E-05	5.47468E-05	5.05637E-05	4.73179E-05	4.50807E-05
3		5.92699E-05	5.60025E-05	5.23359E-05	4.94746E-05	4.67689E-05
4		5.96356E-05	5.62833E-05	5.15949E-05	4.81041E-05	4.58219E-05
5		5.63742E-05	5.34696E-05	4.99155E-05	4.72859E-05	4.53624E-05
6		5.05559E-05	4.84037E-05	4.60643E-05	4.45570E-05	4.37579E-05
7		4.61627E-05	4.50045E-05	4.38055E-05	4.28163E-05	4.22238E-05
8		4.43832E-05	4.35601E-05	4.28132E-05	4.24729E-05	4.19003E-05
9		4.40371E-05	4.29834E-05	4.20365E-05	4.17171E-05	4.12891E-05
10		4.42348E-05	4.30992E-05	4.21543E-05	4.18547E-05	4.14411E-05
11		4.42476E-05	4.30767E-05	4.21207E-05	4.18180E-05	4.13535E-05
12		4.44210E-05	4.32319E-05	4.26122E-05	4.27487E-05	4.22384E-05
13		4.53798E-05	4.38360E-05	4.30296E-05	4.28697E-05	4.20518E-05
14		4.78108E-05	4.56511E-05	4.43800E-05	4.39460E-05	4.28634E-05
15		5.13864E-05	4.83781E-05	4.66919E-05	4.61010E-05	4.42008E-05
16		5.40603E-05	5.10878E-05	5.18339E-05	5.23219E-05	4.94527E-05
17		5.23502E-05	4.96056E-05	4.77244E-05	4.68147E-05	4.49765E-05
18		4.77096E-05	4.59148E-05	4.43659E-05	4.31358E-05	4.21116E-05
19		4.42129E-05	4.32845E-05	4.23519E-05	4.16460E-05	4.12326E-05
20		4.30961E-05	4.28735E-05	4.21592E-05	4.13403E-05	4.09504E-05
21		4.36148E-05	4.39831E-05	4.34532E-05	4.25595E-05	4.18475E-05
22		4.44294E-05	4.52113E-05	4.48256E-05	4.37970E-05	4.31316E-05
23		4.44251E-05	4.55522E-05	4.54583E-05	4.41958E-05	4.35055E-05
24		4.35066E-05	4.46898E-05	4.49058E-05	4.38490E-05	4.32205E-05
25		4.25379E-05	4.34462E-05	4.37800E-05	4.32952E-05	4.26759E-05
26		4.20955E-05	4.27227E-05	4.25932E-05	4.17422E-05	4.12798E-05
27		4.21107E-05	4.27693E-05	4.27836E-05	4.21053E-05	4.19062E-05
28		4.21146E-05	4.28310E-05	4.28164E-05	4.19981E-05	4.15567E-05
29		4.17856E-05	4.24105E-05	4.22789E-05	4.15821E-05	4.12918E-05
30		4.13406E-05	4.19106E-05	4.21031E-05	4.15198E-05	4.11761E-05
31		4.10611E-05	4.14009E-05	4.17274E-05	4.14347E-05	4.11444E-05
32		4.13449E-05	4.13972E-05	4.12063E-05	4.08476E-05	4.06589E-05
33		4.28290E-05	4.30171E-05	4.24947E-05	4.16312E-05	4.12121E-05
34		4.56102E-05	4.64066E-05	4.56914E-05	4.35452E-05	4.23734E-05
35		4.86828E-05	4.96767E-05	4.84107E-05	4.56271E-05	4.40988E-05
36		6.83020E-05	6.80496E-05	6.26191E-05	5.38665E-05	4.82023E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 4.4168E-04 DIRECTION=360. DISTANCE= 1.3 KM DAY=315.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.4631E-04 (298)	1.7749E-04 (315)	1.4474E-04 (284)	1.1303E-04 (262)	8.3923E-05 (341)
2	2.9902E-04 (298)	2.2166E-04 (326)	1.5884E-04 (326)	1.2104E-04 (37)	1.2883E-04 (234)
3	2.6936E-04 (293)	1.8756E-04 (276)	1.6777E-04 (255)	2.2260E-04 (262)	1.6944E-04 (234)
4	2.9483E-04 (292)	2.1105E-04 (292)	1.6249E-04 (260)	1.7389E-04 (260)	1.1812E-04 (260)
5	3.1724E-04 (340)	2.4118E-04 (340)	1.6500E-04 (340)	1.8708E-04 (139)	1.3133E-04 (139)
6	2.4347E-04 (330)	1.6901E-04 (340)	1.3191E-04 (187)	1.0300E-04 (238)	9.7656E-05 (238)
7	1.8184E-04 (330)	1.2709E-04 (306)	1.0649E-04 (174)	1.1478E-04 (174)	8.7788E-05 (174)
8	2.0829E-04 (306)	1.5453E-04 (322)	1.2049E-04 (140)	1.8456E-04 (140)	1.8074E-04 (140)
9	2.3501E-04 (295)	1.3581E-04 (322)	1.0282E-04 (243)	9.9430E-05 (174)	9.2102E-05 (140)
10	2.3472E-04 (295)	1.4654E-04 (280)	1.3118E-04 (1)	1.2266E-04 (1)	1.0724E-04 (140)
11	2.1573E-04 (295)	2.2380E-04 (280)	1.6910E-04 (280)	1.2068E-04 (280)	9.7102E-05 (280)
12	2.0208E-04 (295)	1.8834E-04 (280)	1.4814E-04 (280)	1.5008E-04 (280)	1.3313E-04 (280)
13	2.2235E-04 (307)	1.7465E-04 (307)	1.2835E-04 (287)	1.7844E-04 (287)	1.4076E-04 (287)
14	2.4931E-04 (307)	1.8399E-04 (307)	1.4988E-04 (167)	1.7088E-04 (167)	1.4827E-04 (192)
15	2.9241E-04 (342)	1.9417E-04 (342)	1.4925E-04 (222)	1.4407E-04 (167)	1.3192E-04 (193)
16	3.6723E-04 (331)	2.7191E-04 (331)	2.7051E-04 (241)	3.3782E-04 (241)	2.3470E-04 (241)
17	3.1469E-04 (332)	2.4967E-04 (359)	1.9935E-04 (359)	2.3444E-04 (204)	1.7019E-04 (204)
18	2.5426E-04 (332)	1.7949E-04 (332)	1.1776E-04 (252)	1.1691E-04 (252)	9.2778E-05 (252)
19	1.6745E-04 (338)	1.3244E-04 (360)	8.9134E-05 (252)	9.9861E-05 (333)	8.3758E-05 (333)
20	1.4614E-04 (338)	1.1727E-04 (360)	8.7960E-05 (193)	6.9195E-05 (193)	6.1556E-05 (119)
21	1.6501E-04 (152)	1.4512E-04 (30)	1.6439E-04 (30)	1.1761E-04 (30)	8.6877E-05 (29)
22	2.3054E-04 (152)	1.6668E-04 (152)	1.3833E-04 (30)	1.2611E-04 (30)	1.2463E-04 (282)
23	1.9526E-04 (152)	1.6398E-04 (314)	1.3597E-04 (317)	1.1608E-04 (282)	1.4912E-04 (282)
24	1.8318E-04 (302)	2.1256E-04 (302)	1.6192E-04 (302)	1.1964E-04 (302)	1.0047E-04 (363)
25	1.5500E-04 (302)	1.6909E-04 (302)	1.2149E-04 (302)	1.2921E-04 (363)	1.5253E-04 (208)
26	1.3127E-04 (317)	1.2279E-04 (317)	9.6330E-05 (317)	7.1626E-05 (317)	6.5412E-05 (21)
27	1.3137E-04 (314)	1.2249E-04 (314)	1.0750E-04 (350)	8.8918E-05 (317)	9.9290E-05 (349)
28	1.6359E-04 (314)	1.5616E-04 (314)	1.2714E-04 (312)	9.4542E-05 (312)	6.8823E-05 (25)
29	1.3059E-04 (314)	1.2206E-04 (314)	9.7029E-05 (334)	8.6540E-05 (125)	7.4164E-05 (349)
30	1.0001E-04 (33)	1.0739E-04 (33)	9.8803E-05 (297)	7.2355E-05 (297)	6.3303E-05 (304)
31	1.0931E-04 (179)	1.0013E-04 (33)	9.6942E-05 (285)	7.7454E-05 (285)	8.1136E-05 (349)
32	1.1666E-04 (179)	9.2412E-05 (179)	6.8301E-05 (334)	5.8893E-05 (135)	6.5005E-05 (304)
33	1.0588E-04 (179)	9.3956E-05 (48)	9.2409E-05 (107)	8.0855E-05 (107)	7.1730E-05 (16)
34	1.2612E-04 (42)	1.2132E-04 (297)	1.3466E-04 (16)	1.0614E-04 (16)	8.2656E-05 (16)
35	1.5911E-04 (269)	1.3517E-04 (269)	1.1903E-04 (16)	8.9517E-05 (31)	9.5493E-05 (22)
36	4.3131E-04 (319)	4.4168E-04 (315)	3.0002E-04 (315)	1.6735E-04 (356)	1.0814E-04 (116)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NON--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.7100E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.1408E-03 (321)	7.6370E-04 (262)	5.9157E-04 (341)	5.4131E-04 (341)	3.9127E-04 (341)
2	1.2426E-03 (293)	8.6028E-04 (326)	5.6015E-04 (341)	6.2603E-04 (341)	6.2244E-04 (234)
3	1.0800E-03 (255)	7.8760E-04 (276)	5.7534E-04 (294)	7.5333E-04 (294)	6.6071E-04 (234)
4	1.2863E-03 (292)	7.8364E-04 (6)	5.4174E-04 (260)	5.0530E-04 (260)	3.3377E-04 (161)
5	1.2284E-03 (325)	7.6930E-04 (275)	4.9836E-04 (301)	5.5269E-04 (139)	4.4752E-04 (141)
6	1.0412E-03 (320)	6.8709E-04 (320)	4.5749E-04 (187)	5.4341E-04 (238)	5.0110E-04 (238)
7	8.6431E-04 (253)	5.6780E-04 (322)	4.7184E-04 (207)	4.2106E-04 (209)	3.0828E-04 (209)
8	1.0419E-03 (295)	7.8704E-04 (322)	4.4259E-04 (180)	6.1774E-04 (214)	4.3394E-04 (140)
9	1.1546E-03 (295)	6.3097E-04 (322)	3.6018E-04 (322)	4.7402E-04 (174)	4.2804E-04 (174)
10	1.0564E-03 (295)	6.5574E-04 (236)	3.8131E-04 (306)	4.5960E-04 (1)	3.8802E-04 (1)
11	1.1261E-03 (301)	7.1814E-04 (280)	4.8653E-04 (280)	4.5938E-04 (330)	3.4626E-04 (209)
12	1.0198E-03 (301)	6.2549E-04 (280)	4.3533E-04 (280)	3.9408E-04 (217)	4.0094E-04 (280)
13	9.1100E-04 (291)	6.1934E-04 (291)	4.3847E-04 (295)	4.8711E-04 (287)	4.9737E-04 (192)
14	1.1586E-03 (290)	7.8066E-04 (290)	4.8389E-04 (251)	6.2532E-04 (251)	4.3641E-04 (251)
15	9.5773E-04 (309)	6.3849E-04 (217)	6.1681E-04 (240)	6.0893E-04 (217)	4.7265E-04 (193)
16	1.1643E-03 (331)	6.9619E-04 (256)	5.7727E-04 (230)	7.1708E-04 (283)	4.9523E-04 (283)
17	1.0150E-03 (190)	8.2340E-04 (359)	6.2685E-04 (359)	5.9071E-04 (231)	4.6378E-04 (342)
18	9.9798E-04 (353)	6.9840E-04 (281)	5.0191E-04 (281)	4.2000E-04 (252)	3.5581E-04 (20)
19	9.5159E-04 (338)	6.1200E-04 (338)	3.5032E-04 (281)	4.7961E-04 (333)	3.7200E-04 (333)
20	8.6964E-04 (338)	5.4681E-04 (338)	3.7140E-04 (280)	2.3284E-04 (347)	1.9767E-04 (358)
21	8.1183E-04 (333)	7.3176E-04 (333)	6.7939E-04 (30)	4.0087E-04 (29)	3.6730E-04 (29)
22	9.2087E-04 (152)	7.1599E-04 (206)	5.6091E-04 (232)	4.2772E-04 (282)	5.6566E-04 (282)
23	8.3586E-04 (343)	7.1574E-04 (314)	5.8182E-04 (232)	4.7412E-04 (282)	5.8731E-04 (282)
24	7.8855E-04 (302)	7.8404E-04 (302)	5.6270E-04 (302)	4.4814E-04 (127)	4.8945E-04 (283)
25	6.9273E-04 (302)	6.5152E-04 (302)	4.1414E-04 (302)	5.2741E-04 (363)	5.2430E-04 (363)
26	6.6291E-04 (317)	5.5912E-04 (317)	4.0309E-04 (265)	2.1902E-04 (349)	2.4307E-04 (21)
27	6.0918E-04 (314)	5.3650E-04 (314)	5.1029E-04 (350)	3.1033E-04 (350)	3.5419E-04 (349)
28	8.1624E-04 (314)	7.4274E-04 (314)	5.0439E-04 (312)	3.3867E-04 (312)	2.5718E-04 (232)
29	6.0918E-04 (314)	5.5202E-04 (334)	3.9339E-04 (334)	3.0534E-04 (125)	3.1326E-04 (349)
30	5.2007E-04 (33)	5.7077E-04 (33)	3.8562E-04 (285)	2.8223E-04 (46)	2.2643E-04 (304)
31	5.4587E-04 (179)	5.1758E-04 (33)	4.9486E-04 (285)	3.3948E-04 (285)	3.6908E-04 (349)
32	6.3005E-04 (179)	4.1341E-04 (179)	2.6127E-04 (334)	1.9115E-04 (135)	2.4004E-04 (304)
33	5.6447E-04 (179)	4.7165E-04 (48)	3.7351E-04 (107)	2.3103E-04 (334)	2.2390E-04 (311)
34	7.2011E-04 (42)	6.5096E-04 (48)	5.0402E-04 (16)	3.2772E-04 (16)	3.1774E-04 (289)
35	8.7724E-04 (269)	7.0573E-04 (269)	5.3601E-04 (16)	3.1735E-04 (163)	3.8975E-04 (289)
36	1.7100E-03 (308)	1.2827E-03 (319)	8.7686E-04 (356)	5.6515E-04 (183)	4.2695E-04 (186)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
315	4.4168E-04	36	1.33
319	4.3131E-04	36	0.71
309	3.9987E-04	36	0.71
331	3.6721E-04	16	0.71
356	3.6560E-04	36	1.33
222	3.4332E-04	16	0.71
241	3.3782E-04	16	4.65
284	3.3030E-04	36	0.71
355	3.2619E-04	36	1.33
340	3.1724E-04	5	0.71
342	3.1589E-04	16	0.71
332	3.1469E-04	17	0.71
231	3.1096E-04	16	0.71
218	3.0074E-04	16	0.71
354	3.0068E-04	36	0.71
298	2.9902E-04	2	0.71
292	2.9483E-04	4	0.71
321	2.8484E-04	36	0.71
17	2.8323E-04	36	0.71
185	2.8137E-04	16	0.71

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT-MAXIMUM POWER LOAD CONDITIONS-SRC NOX

STACK # 1--KINGSTON STACKS#1-4, MAX.LOAD SRC NOX

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOX	566.00	0.00	76.20	4.27	14.26	427.40	204.20

RANGE(KM)= 0.71 1.33 2.40 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IMO= 6 JDAY=168
ISTAB= 4 4 4 4 4 4 4 4 4 3 2 1 1 1 3 3 3 4 4 4 4 4 4 4
AWS= 2.9 1.2 1.3 2.5 0.9 1.7 1.5 1.1 0.8 1.6 3.0 4.0 4.4 5.9 7.0 6.9 7.1 7.3 7.2 6.6 5.6 5.9 5.9 4.7
TEMP= 292. 292. 291. 291. 290. 290. 290. 290. 292. 294. 296. 298. 300. 301. 302. 302. 303. 303. 303. 302. 300. 299. 298. 296.
AFV= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 9. 30. 29. 30. 27. 25. 11. 26. 29. 51.
AFVR= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 9. 30. 29. 30. 27. 25. 11. 26. 29. 51.
HLH1= 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2058. 1982. 1906. 1830. 1754.
1676. 1602. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.

JYR=75 IMO=12 JDAY=336
ISTAB= 4 4 4 4 4 4 4 4 4 4 1 1 1 1 1 2 3 4 4 4 4 4 4 4
AWS= 2.6 2.2 1.6 1.3 1.0 1.0 0.9 0.5 0.9 1.8 2.0 2.8 3.3 3.8 3.8 3.7 3.7 4.4 4.4 3.8 3.9 3.8 2.7 3.0
TEMP= 273. 272. 271. 271. 270. 270. 270. 269. 270. 272. 275. 278. 281. 282. 284. 284. 284. 283. 281. 279. 277. 277. 275. 275.
AFV= 209. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 8. 39. 38. 20. 15. 54. 60. 46. 53. 83.
AFVR= 209. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 8. 39. 38. 20. 15. 54. 60. 46. 53. 83.
HLH1= 305. 305. 305. 305. 305. 305. 305. 381. 457. 533. 609. 685.
761. 837. 914. 914. 914. 914. 914. 914. 914. 914. 914. 914.

JYR=76 IMO= 1 JDAY= 4
ISTAB= 3 3 4 3 3 4 4 4 3 1 1 1 1 1 1 1 3 4 4 4 4 4 4 4
AWS= 5.0 7.2 7.6 7.3 8.7 7.9 7.7 6.4 6.1 5.4 6.2 7.5 6.2 5.7 6.3 6.4 5.9 6.4 6.7 8.1 8.6 7.1 6.2 6.6
TEMP= 272. 271. 270. 270. 268. 267. 266. 266. 266. 266. 267. 267. 268. 269. 270. 270. 270. 269. 268. 267. 267. 266. 266. 265.
AFV= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
AFVR= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
HLH1= 400. 400. 400. 400. 400. 400. 400. 438. 476. 514. 552. 590.
628. 666. 710. 710. 710. 710. 710. 710. 710. 710. 710. 710.

JYR=76 IMO= 1 JDAY= 8
ISTAB= 4 4 3 3 3 3 3 3 3 2 1 1 1 1 1 1 2 3 3 4 3 4 4 4
AWS= 7.2 8.0 10.6 11.0 10.3 11.2 10.7 8.2 9.6 9.3 9.2 9.0 6.6 6.9 6.8 7.5 7.2 7.7 5.8 5.9 5.8 6.8 6.1 5.1
TEMP= 276. 275. 274. 272. 271. 270. 269. 268. 268. 267. 267. 268. 267. 267. 267. 266. 266. 265. 264. 264. 264. 263. 262. 262.
AFV= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
AFVR= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
HLH1= 853. 853. 853. 853. 853. 853. 853. 868. 883. 898. 913. 928.
943. 958. 975. 975. 975. 975. 975. 975. 975. 975. 975. 975.

JYR=76 IMO= 1 JDAY= 17
ISTAB= 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

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AWS= 10.1  8.7 10.6  9.1  7.7  8.9 10.2  8.9  7.7  8.2 10.2 10.6 10.5 10.1 10.2  9.1  8.1  8.1  6.1  5.7  6.1  5.5  4.6  5.7
TEMP= 273. 272. 272. 271. 270. 270. 269. 267. 267. 267. 267. 268. 268. 268. 268. 268. 267. 267. 267. 267. 266. 266. 265. 265.
AFV=  164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
AFVR= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
HLHI=  400.  400.  400.  400.  400.  400.  400.  427.  454.  481.  508.  535.
       562.  589.  617.  617.  617.  617.  617.  617.  617.  617.  617.  617.


JYR=76 IMO= 1 JDAY= 27
ISTAB=  3    3    3    3    3    3    3    3    3    3    3    3    3    1    1    1    3    3    4    4    4    4    4    4
AWS=  6.4  5.2  6.4  7.2  7.6  8.0  8.1  8.9  8.8  8.4  8.1  7.5  8.2  7.5  9.1  6.7  8.0  7.2  5.7  3.9  2.8  2.3  4.2  6.3
TEMP= 275. 275. 275. 274. 274. 274. 274. 274. 273. 273. 273. 273. 273. 273. 273. 273. 272. 272. 272. 272. 271. 271. 270. 270.
AFV=  170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
AFVR= 170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
HLHI=  457.  457.  457.  457.  457.  457.  457.  521.  585.  649.  713.  777.
       841.  905.  975.  975.  975.  975.  975.  975.  975.  975.  975.  975.


JYR=76 IMO= 3 JDAY= 70
ISTAB=  4    4    4    4    4    4    4    4    3    3    3    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.1  4.3  4.1  3.5  3.6  4.4  3.3  2.7  1.4  0.9  1.7  2.4  2.6  2.6  2.5  4.0  4.4  3.8  3.9  3.8  1.2  1.0  0.5  0.7
TEMP= 276. 276. 275. 275. 274. 273. 273. 273. 274. 276. 278. 281. 283. 284. 285. 287. 287. 287. 286. 285. 283. 282. 280. 279.
AFV=  155. 160. 160. 160. 155. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
AFVR= 155. 160. 160. 160. 155. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IMO= 3 JDAY= 78
ISTAB=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    2    3    3    4    4    4    4    4    4
AWS=  1.5  2.7  3.3  2.5  2.0  2.7  3.2  3.9  3.2  4.8  4.4  4.5  5.0  6.3  6.0  6.3  6.9  5.6  5.9  6.7  6.8  6.8  5.1  4.8
TEMP= 273. 272. 271. 271. 271. 271. 271. 271. 273. 278. 282. 285. 288. 289. 291. 291. 291. 290. 289. 288. 288. 287. 286. 284.
AFV=  268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
AFVR= 268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
HLHI=    0.    0.    0.    0.    0.    0.    0.  228.  456.  684.  912. 1140.
      1368. 1596. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829.


JYR=76 IMO= 3 JDAY= 84
ISTAB=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  3.5  3.9  4.3  4.6  3.5  3.7  1.8  1.6  2.3  3.2  6.4  6.5  7.0    7  7.3  7.4  8.5  6.5  6.9  5.3  5.5  6.7  5.1
TEMP= 279. 278. 277. 276. 276. 275. 275. 275. 278. 284. 287. 289. 291. 291. 293. 293. 293. 293. 291. 291. 291. 289. 286. 285.
AFV=   61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
AFVR=  61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0. 1249. 2498. 3747. 4996. 6245.
      7494. 8743. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999.


JYR=76 IMO= 4 JDAY= 94
ISTAB=  4    4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  1.8  1.3  0.9  1.6  1.6  1.6  0.6  0.4  0.9  1.5  2.2  2.7  4.2  5.3  5.6  5.1  5.6  4.9  5.1  5.9  6.6  5.9  7.6  5.9
TEMP= 281. 280. 279. 278. 277. 277. 276. 277. 280. 284. 289. 292. 295. 296. 298. 298. 298. 298. 297. 295. 293. 292. 291. 290.
AFV=   52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
AFVR=  52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
HLHI=  400.  400.  400.  400.  400.  400.  400.  537.  674.  811.  948. 1085.
      1222. 1359. 1496. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499.
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AWS=  3.0  3.1  3.1  3.1  3.2  3.3  3.3  3.4  3.5  3.6  3.8  3.9  4.1  4.2  4.3  4.3  4.3  4.3  4.3  4.3  4.3  4.3  4.3
TEMP= 279. 277. 276. 276. 275. 274. 274. 275. 279. 283. 286. 287. 289. 290. 291. 293. 293. 293. 293. 291. 288. 286. 284. 283.
AFV=  185. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
AFVR= 186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
HLH1=   0.   0.   0.   0.   0.   0.   0.   0. 186. 372. 558. 744. 930.
      1116. 1302. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493.


JYR=76 IHO= 4 JDAY=105
ISTAB=  4    4    4    4    4    4    2    4    2    1    1    1    1    2    1    1    2    4    4    4    4    4    4
AWS=  2.6  1.8  1.5  1.0  1.3  1.3  0.7  1.2  0.8  1.1  2.0  2.9  3.6  3.9  2.5  3.6  3.3  3.3  3.8  4.0  5.4  5.3  3.7  3.5
TEMP= 283. 283. 282. 280. 280. 280. 280. 281. 284. 288. 292. 295. 296. 297. 298. 299. 299. 298. 297. 295. 294. 293. 292. 291.
AFV=  124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
AFVR= 124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
HLH1=   0.   0.   0.   0.   0.   0.   0.   0. 266. 532. 798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IHO= 4 JDAY=107
ISTAB=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  3.4  3.6  3.6  2.5  1.2  0.8  0.6  2.2  2.3  2.4  3.9  6.1  6.4  5.5  4.1  4.3  4.0  2.8  3.6  4.2  3.3  3.3  4.0  4.3
TEMP= 288. 287. 286. 286. 286. 286. 285. 285. 286. 289. 293. 295. 297. 298. 298. 299. 299. 298. 298. 297. 295. 293. 292. 291. 289.
AFV=   58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
AFVR=  58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
HLH1=  244.  244.  244.  244.  244.  244.  244.  244.  491.  738.  985. 1232. 1479.
      1726. 1973. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225.


JYR=76 IHO= 4 JDAY=117
ISTAB=  3    3    3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    4    4    4    4    4    4
AWS=  5.6  6.3  4.3  4.8  5.1  5.2  4.8  5.1  4.2  4.3  3.7  4.2  5.7  6.4  5.9  4.6  5.1  5.9  4.3  4.2  4.5  1.9  1.7  2.3
TEMP= 282. 281. 281. 280. 280. 280. 279. 278. 279. 279. 279. 279. 280. 281. 282. 283. 284. 285. 285. 284. 283. 282. 280. 279. 278.
AFV=  103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
AFVR= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
HLH1=  457.  457.  457.  457.  457.  457.  457.  590.  723.  856.  989. 1122.
      1255. 1388. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IHO= 4 JDAY=118
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.3  2.7  3.6  3.4  4.3  5.2  4.3  2.5  2.1  2.4  5.0  5.1  3.8  4.4  5.4  5.4  6.3  7.3  6.1  6.3  5.7  5.8  4.7  3.5
TEMP= 277. 277. 276. 276. 275. 275. 275. 275. 277. 280. 282. 284. 286. 287. 288. 289. 290. 290. 289. 288. 287. 286. 285. 284. 283.
AFV=  226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
AFVR= 226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
HLH1=  914.  914.  914.  914.  914.  914.  914.  952.  990. 1028. 1066. 1104.
      1142. 1180. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219.


JYR=76 IHO= 5 JDAY=126
ISTAB=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.0  1.2  1.2  1.5  1.3  0.9  0.4  0.9  1.1  2.9  3.7  4.8  4.3  5.2  5.1  4.6  5.3  4.8  5.6  6.3  6.4  5.8  4.1  4.4
TEMP= 280. 279. 279. 278. 278. 278. 278. 280. 284. 287. 290. 292. 294. 295. 296. 297. 297. 296. 296. 294. 293. 290. 289. 290.
AFV=   42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
AFVR=  42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
HLH1=   0.   0.   0.   0.   0.   0.   0.   0. 156. 312. 468. 624. 780.
       936. 1092. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.


JYR=76 IHO= 5 JDAY=128
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AWS=  1.9  2.7  3.3  4.0  4.1  3.8  3.3  2.3  2.9  1.5  3.2  3.1  3.9  5.3  5.6  5.9  6.4  7.2  7.2  7.8  8.4  6.4  5.4  2.8
TEMP= 290. 290. 290. 290. 290. 290. 290. 290. 291. 291. 292. 292. 293. 292. 292. 291. 289. 287. 286. 285. 285. 284. 284. 284.
AFV=   66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 154. 167. 165. 145. 158. 165. 169. 169. 169. 175. 173. 177. 175.
AFVR=  66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
HLHI=  762.  762.  762.  762.  762.  762.  762.  762.  800.  838.  876.  914.  952.
       990. 1028. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067.


JYR=76 I4D= 5 JDAY=140
ISTAR=  4    4    4    4    4    4    4    2    3    1    1    1    1    1    1    1    1    1    4    4    4    4    4    4
AWS=  2.4  1.9  2.4  3.2  1.6  2.1  2.8  0.5  0.8  1.3  1.7  1.7  3.7  3.3  3.7  3.7  3.8  3.5  4.7  4.2  4.9  4.7  4.1  2.8
TEMP= 281. 280. 279. 279. 279. 278. 278. 281. 284. 287. 289. 290. 291. 292. 293. 294. 294. 294. 293. 292. 290. 288. 286. 285.
AFV=  177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
AFVR= 177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
HLHI=   40.   40.   40.   40.   40.   40.   40.  225.  410.  595.  780.  965.
      1150. 1335. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527.


JYR=76 I4D= 5 JDAY=141
ISTAR=  4    4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  2.1  1.9  1.9  0.9  1.2  1.2  0.7  0.9  1.3  2.6  3.1  3.0  2.9  3.1  2.3  3.1  3.1  3.2  4.4  4.7  3.6  2.3  2.7
TEMP= 283. 283. 287. 281. 280. 280. 280. 282. 286. 289. 292. 293. 294. 295. 296. 297. 297. 297. 297. 295. 292. 290. 289. 288.
AFV=  105. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
AFVR= 106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
HLHI=    0.    0.    0.    0.    0.    0.    0.  190.  380.  570.  760.  950.
      1140. 1330. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 I4D= 5 JDAY=142
ISTAR=  4    4    4    4    4    4    4    4    2    2    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS=  2.5  2.2  2.6  2.5  1.6  0.7  0.5  0.8  0.8  1.1  2.2  2.0  2.7  2.9  2.5  2.9  2.2  3.0  2.5  2.8  4.8  3.3  3.3  3.8
TEMP= 286. 286. 285. 285. 284. 283. 283. 285. 288. 291. 294. 296. 297. 298. 298. 299. 299. 299. 298. 297. 294. 293. 291. 290.
AFV=   84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
AFVR=  84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
HLHI=    0.    0.    0.    0.    0.    0.    0.  171.  342.  513.  684.  855.
      1026. 1197. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372.

FEAR BASED ON  20. DAYS
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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOX--SO2

MAXIMUM MEAN CONC= 1.07520E-04 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1		7.15924E-05	6.56347E-05	5.73479E-05	4.87472E-05	4.44041E-05
2		6.40918E-05	5.74112E-05	5.14828E-05	4.67160E-05	4.34330E-05
3		5.92294E-05	5.27180E-05	4.80910E-05	4.49742E-05	4.32822E-05
4		5.85252E-05	5.22618E-05	4.73945E-05	4.37927E-05	4.21614E-05
5		5.60928E-05	5.07602E-05	4.63081E-05	4.39301E-05	4.31696E-05
6		4.92898E-05	4.59059E-05	4.32857E-05	4.15544E-05	4.07721E-05
7		4.31829E-05	4.18013E-05	4.09063E-05	4.03848E-05	4.01652E-05
8		4.06250E-05	4.02938E-05	4.01085E-05	4.00673E-05	4.02836E-05
9		4.00689E-05	4.00251E-05	4.00082E-05	4.00026E-05	4.00006E-05
10		4.00134E-05	4.00053E-05	4.01656E-05	4.05172E-05	4.04618E-05
11		4.01060E-05	4.00371E-05	4.00136E-05	4.00072E-05	4.00021E-05
12		4.07425E-05	4.02996E-05	4.01776E-05	4.05098E-05	4.06119E-05
13		4.36242E-05	4.16097E-05	4.10059E-05	4.16048E-05	4.14091E-05
14		5.26838E-05	4.62110E-05	4.30232E-05	4.26367E-05	4.22615E-05
15		7.01866E-05	5.70159E-05	4.95525E-05	4.61695E-05	4.38364E-05
16		8.33698E-05	6.72511E-05	6.43231E-05	6.24711E-05	5.44404E-05
17		7.49765E-05	6.07333E-05	5.45445E-05	5.09394E-05	4.71813E-05
18		5.75754E-05	4.94688E-05	4.54252E-05	4.28764E-05	4.14812E-05
19		4.61406E-05	4.32485E-05	4.17959E-05	4.08558E-05	4.04306E-05
20		4.15522E-05	4.09190E-05	4.05775E-05	4.02756E-05	4.01335E-05
21		4.02807E-05	4.01915E-05	4.01590E-05	4.04040E-05	4.04729E-05
22		4.00346E-05	4.00255E-05	4.00149E-05	4.00058E-05	4.00019E-05
23		4.00028E-05	4.00035E-05	4.00090E-05	4.00047E-05	4.00011E-05
24		4.00009E-05	4.00220E-05	4.01893E-05	4.01911E-05	4.00931E-05
25		4.00030E-05	4.00543E-05	4.05416E-05	4.06674E-05	4.04128E-05
26		4.00145E-05	4.00408E-05	4.02043E-05	4.01974E-05	4.00953E-05
27		4.00651E-05	4.01092E-05	4.01132E-05	4.00605E-05	4.00268E-05
28		4.01649E-05	4.03052E-05	4.03375E-05	4.02065E-05	4.01111E-05
29		4.02249E-05	4.04320E-05	4.04979E-05	4.03191E-05	4.01809E-05
30		4.01656E-05	4.03054E-05	4.03375E-05	4.02065E-05	4.01111E-05
31		4.00768E-05	4.01129E-05	4.01065E-05	4.00562E-05	4.00258E-05
32		4.01308E-05	4.00840E-05	4.00384E-05	4.00121E-05	4.00038E-05
33		4.07036E-05	4.04594E-05	4.02035E-05	4.00624E-05	4.00201E-05
34		4.29409E-05	4.21774E-05	4.12039E-05	4.04589E-05	4.01684E-05
35		4.93071E-05	4.75226E-05	4.45329E-05	4.19252E-05	4.09084E-05
36		1.07521E-04	9.83995E-05	7.83581E-05	5.87648E-05	4.91197E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 2.0913E-04 DIRECTION=360. DISTANCE= 0.7 KM DAY=319.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.2702E-04 (298)	9.4329E-05 (315)	8.7060E-05 (356)	6.7480E-05 (356)	5.9166E-05 (355)
2	1.5034E-04 (298)	9.6356E-05 (298)	6.8828E-05 (308)	6.9010E-05 (292)	5.9110E-05 (292)
3	1.3499E-04 (298)	9.3357E-05 (298)	7.3032E-05 (298)	6.0435E-05 (298)	5.2670E-05 (185)
4	1.4635E-04 (292)	1.0825E-04 (292)	8.5709E-05 (340)	6.6081E-05 (340)	5.4022E-05 (340)
5	1.7261E-04 (340)	1.3197E-04 (340)	9.8167E-05 (340)	7.6759E-05 (340)	6.1374E-05 (340)
6	1.3446E-04 (340)	9.9641E-05 (340)	6.8983E-05 (340)	5.1876E-05 (340)	4.5650E-05 (340)
7	7.6185E-05 (340)	5.9398E-05 (340)	4.7816E-05 (340)	4.2789E-05 (321)	4.1237E-05 (321)
8	4.7597E-05 (340)	4.3349E-05 (340)	4.1093E-05 (340)	4.0809E-05 (321)	4.5495E-05 (321)
9	4.0865E-05 (340)	4.0294E-05 (340)	4.0072E-05 (340)	4.0023E-05 (331)	4.0003E-05 (340)
10	4.0171E-05 (342)	4.0050E-05 (342)	4.3298E-05 (331)	5.0340E-05 (331)	4.9235E-05 (331)
11	4.1651E-05 (342)	4.0624E-05 (342)	4.0210E-05 (342)	4.0102E-05 (342)	4.0035E-05 (342)
12	4.9237E-05 (342)	4.4214E-05 (342)	4.2263E-05 (342)	4.7198E-05 (331)	5.0218E-05 (331)
13	7.1988E-05 (342)	5.6494E-05 (342)	4.8827E-05 (342)	5.9921E-05 (331)	5.8584E-05 (331)
14	1.1412E-04 (342)	8.0993E-05 (342)	5.8297E-05 (342)	6.0638E-05 (331)	5.9776E-05 (331)
15	1.6237E-04 (342)	1.1195E-04 (342)	9.0896E-05 (222)	8.9216E-05 (222)	7.0548E-05 (222)
16	1.9189E-04 (227)	1.3971E-04 (331)	1.4208E-04 (241)	1.8022E-04 (241)	1.3377E-04 (241)
17	1.6623E-04 (332)	1.2014E-04 (332)	1.0149E-04 (231)	9.5581E-05 (231)	7.3369E-05 (231)
18	1.3788E-04 (332)	1.0075E-04 (332)	7.1115E-05 (332)	5.5262E-05 (231)	4.9335E-05 (231)
19	9.1997E-05 (332)	7.3419E-05 (332)	5.8011E-05 (332)	4.7973E-05 (332)	4.4160E-05 (332)
20	5.8962E-05 (332)	5.3364E-05 (332)	4.8035E-05 (332)	4.3692E-05 (332)	4.1878E-05 (332)
21	4.4397E-05 (332)	4.3338E-05 (332)	4.2043E-05 (332)	4.7034E-05 (331)	4.9010E-05 (331)
22	4.0627E-05 (332)	4.0481E-05 (332)	4.0265E-05 (332)	4.0093E-05 (332)	4.0032E-05 (332)
23	4.0054E-05 (332)	4.0038E-05 (332)	4.0162E-05 (315)	4.0090E-05 (315)	4.0021E-05 (315)
24	4.0016E-05 (315)	4.0438E-05 (315)	4.3786E-05 (315)	4.3822E-05 (315)	4.1861E-05 (315)
25	4.0060E-05 (315)	4.1085E-05 (315)	5.0832E-05 (315)	5.3347E-05 (315)	4.8256E-05 (315)
26	4.0289E-05 (315)	4.0815E-05 (315)	4.4086E-05 (315)	4.3949E-05 (315)	4.1907E-05 (315)
27	4.1302E-05 (315)	4.2184E-05 (315)	4.2264E-05 (315)	4.1209E-05 (315)	4.0537E-05 (315)
28	4.3298E-05 (315)	4.6105E-05 (315)	4.6750E-05 (315)	4.4130E-05 (315)	4.2222E-05 (315)
29	4.4497E-05 (315)	4.8640E-05 (315)	4.9958E-05 (315)	4.6382E-05 (315)	4.3617E-05 (315)
30	4.3297E-05 (315)	4.6104E-05 (315)	4.6749E-05 (315)	4.4130E-05 (315)	4.2222E-05 (315)
31	4.1300E-05 (315)	4.2153E-05 (315)	4.2101E-05 (315)	4.1119E-05 (315)	4.0515E-05 (315)
32	4.1327E-05 (17)	4.0637E-05 (17)	4.0303E-05 (315)	4.0127E-05 (315)	4.0045E-05 (315)
33	4.7036E-05 (17)	4.4044E-05 (17)	4.1912E-05 (355)	4.0641E-05 (355)	4.0229E-05 (355)
34	6.2006E-05 (17)	5.4902E-05 (17)	4.9565E-05 (17)	4.4052E-05 (17)	4.1412E-05 (17)
35	8.3062E-05 (17)	7.0155E-05 (17)	6.2497E-05 (17)	5.1483E-05 (17)	4.6743E-05 (17)
36	2.0913E-04 (319)	2.0103E-04 (315)	1.5518E-04 (356)	1.0122E-04 (356)	7.2166E-05 (356)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

(EARLY MAXIMUM 3-HOUR CONC= 8.0202E-04 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	5.3875E-04 (321)	3.5080E-04 (321)	2.1638E-04 (356)	1.6128E-04 (355)	1.4911E-04 (355)
2	5.2550E-04 (298)	2.7529E-04 (308)	2.1085E-04 (292)	2.6024E-04 (292)	1.8845E-04 (292)
3	4.8207E-04 (298)	3.0891E-04 (298)	2.2847E-04 (298)	1.7915E-04 (298)	1.3716E-04 (185)
4	5.6577E-04 (292)	3.1965E-04 (292)	2.2089E-04 (340)	1.7907E-04 (340)	1.2040E-04 (340)
5	5.6289E-04 (340)	3.5105E-04 (340)	2.2359E-04 (340)	1.9179E-04 (340)	1.4219E-04 (292)
6	4.2341E-04 (340)	2.5441E-04 (340)	1.4669E-04 (321)	1.1772E-04 (321)	8.3386E-05 (321)
7	1.9116E-04 (340)	1.1562E-04 (340)	7.5969E-05 (321)	6.2069E-05 (321)	4.9838E-05 (321)
8	7.2041E-05 (340)	5.3311E-05 (340)	4.4062E-05 (340)	4.6462E-05 (321)	8.3960E-05 (321)
9	4.3652E-05 (340)	4.1170E-05 (340)	4.0267E-05 (340)	4.0184E-05 (331)	4.0024E-05 (331)
10	4.1317E-05 (342)	4.0383E-05 (342)	6.6381E-05 (331)	1.2272E-04 (331)	1.1388E-04 (331)
11	5.2208E-05 (342)	4.4552E-05 (342)	4.1279E-05 (342)	4.0486E-05 (342)	4.0172E-05 (342)
12	1.0354E-04 (342)	6.8153E-05 (342)	4.9619E-05 (342)	9.7505E-05 (331)	1.2172E-04 (331)
13	2.3281E-04 (342)	1.3441E-04 (342)	9.0394E-05 (331)	1.9732E-04 (331)	1.8815E-04 (331)
14	4.0023E-04 (342)	2.2366E-04 (342)	1.1346E-04 (342)	1.8872E-04 (331)	1.9254E-04 (331)
15	4.7996E-04 (342)	2.8817E-04 (241)	2.1423E-04 (222)	2.1221E-04 (222)	1.3344E-04 (222)
16	5.6257E-04 (331)	3.3725E-04 (342)	2.9346E-04 (222)	3.1202E-04 (241)	2.4650E-04 (241)
17	5.0379E-04 (218)	3.2541E-04 (332)	2.6657E-04 (231)	3.0564E-04 (231)	2.3209E-04 (342)
18	3.9671E-04 (332)	2.3328E-04 (332)	1.4353E-04 (231)	1.2950E-04 (231)	9.8382E-05 (231)
19	2.3076E-04 (332)	1.7939E-04 (332)	1.3480E-04 (332)	8.7540E-05 (332)	6.6072E-05 (332)
20	1.1309E-04 (332)	1.1380E-04 (332)	9.2965E-05 (332)	6.6225E-05 (332)	5.3733E-05 (332)
21	6.1954E-05 (332)	6.1718E-05 (332)	5.4942E-05 (332)	9.6251E-05 (331)	1.1207E-04 (331)
22	4.3650E-05 (332)	4.3445E-05 (332)	4.2035E-05 (332)	4.0728E-05 (332)	4.0255E-05 (332)
23	4.0355E-05 (332)	4.0296E-05 (332)	4.1299E-05 (315)	4.0719E-05 (315)	4.0171E-05 (315)
24	4.0126E-05 (315)	4.3500E-05 (315)	7.0287E-05 (315)	7.0573E-05 (315)	5.4892E-05 (315)
25	4.0482E-05 (315)	4.8681E-05 (315)	1.2666E-04 (315)	1.4678E-04 (315)	1.0605E-04 (315)
26	4.2315E-05 (315)	4.6520E-05 (315)	7.2687E-05 (315)	7.1588E-05 (315)	5.5253E-05 (315)
27	5.0412E-05 (315)	5.7471E-05 (315)	5.8111E-05 (315)	4.9671E-05 (315)	4.4294E-05 (315)
28	6.6380E-05 (315)	8.8837E-05 (315)	9.4002E-05 (315)	7.3041E-05 (315)	5.7779E-05 (315)
29	7.5977E-05 (315)	1.0912E-04 (315)	1.1967E-04 (315)	9.1057E-05 (315)	6.8937E-05 (315)
30	6.6380E-05 (315)	8.8834E-05 (315)	9.3995E-05 (315)	7.3039E-05 (315)	5.7779E-05 (315)
31	5.0400E-05 (315)	5.7222E-05 (315)	5.6911E-05 (315)	4.8953E-05 (315)	4.4124E-05 (315)
32	5.0612E-05 (17)	4.5084E-05 (17)	4.2412E-05 (315)	4.1017E-05 (315)	4.0361E-05 (315)
33	9.6079E-05 (17)	7.1273E-05 (17)	5.2969E-05 (355)	4.4224E-05 (355)	4.1518E-05 (355)
34	2.1395E-04 (17)	1.4401E-04 (17)	1.0843E-04 (17)	7.0083E-05 (17)	5.0524E-05 (17)
35	3.7336E-04 (17)	2.4065E-04 (17)	1.9281E-04 (17)	1.2281E-04 (17)	8.9606E-05 (17)
36	8.0202E-04 (308)	5.6934E-04 (354)	4.2996E-04 (356)	2.7212E-04 (356)	1.6857E-04 (356)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
319	2.0913E-04	36	0.71
308	2.0134E-04	36	0.71
315	2.0103E-04	36	1.33
222	1.9189E-04	16	0.71
331	1.8971E-04	16	0.71
241	1.8022E-04	16	4.65
231	1.7656E-04	16	0.71
342	1.7424E-04	16	0.71
356	1.7353E-04	36	1.33
340	1.7261E-04	5	0.71
218	1.6818E-04	16	0.71
332	1.6623E-04	17	0.71
355	1.6227E-04	35	1.33
17	1.6132E-04	36	0.71
354	1.5968E-04	36	0.71
284	1.5269E-04	36	0.71
321	1.5168E-04	36	0.71
185	1.5137E-04	36	0.71
298	1.5034E-04	2	0.71
292	1.4635E-04	4	0.71

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PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY    PROJECT 7101

SHAWVILLE PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2    WHGT= 91.0  MST= 1
NPOL= 2    JTAR= 1    INPUT= 2
NSEA= 1    FCONV=   0.3048006    SYTF= 1.0    FIV= 3.0    TAF= 0.60    BACKGR=      75.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
```

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1080.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1350.0	1300.0	1400.0	1880.0	2160.0
2	1200.0	1200.0	1600.0	2174.0	2100.0
3	1160.0	1460.0	1590.0	1760.0	2000.0
4	1120.0	1400.0	1540.0	1600.0	1900.0
5	1200.0	1360.0	1520.0	1600.0	1800.0
6	1250.0	1340.0	1350.0	1567.0	1560.0
7	1220.0	1320.0	1260.0	1560.0	1500.0
8	1180.0	1300.0	1540.0	1500.0	1481.0
9	1100.0	1300.0	1340.0	1627.0	1549.0
10	1070.0	1320.0	1584.0	1639.0	1564.0
11	1050.0	1320.0	1580.0	1766.0	1668.0
12	1160.0	1060.0	1340.0	1836.0	1744.0
13	1320.0	1150.0	1300.0	1720.0	1700.0
14	1400.0	1420.0	1420.0	1743.0	1800.0
15	1420.0	1520.0	1605.0	1700.0	1900.0
16	1440.0	1590.0	1580.0	1900.0	2100.0
17	1440.0	1300.0	1580.0	1900.0	2100.0
18	1440.0	1260.0	1260.0	1780.0	1840.0
19	1420.0	1200.0	1320.0	1700.0	1620.0
20	1400.0	1100.0	1400.0	1625.0	1540.0
21	1200.0	1080.0	1480.0	1540.0	1520.0
22	1060.0	1300.0	1572.0	1440.0	1620.0
23	1050.0	1460.0	1540.0	1120.0	1537.0
24	1200.0	1500.0	1540.0	1551.0	1796.0
25	1200.0	1400.0	1540.0	1505.0	1773.0
26	1260.0	1440.0	1520.0	1660.0	2120.0
27	1380.0	1460.0	1560.0	1880.0	2320.0
28	1440.0	1400.0	1540.0	1760.0	2251.0
29	1460.0	1440.0	1560.0	2140.0	2224.0
30	1460.0	1480.0	1580.0	2040.0	2253.0
31	1480.0	1500.0	1560.0	2100.0	2293.0
32	1500.0	1540.0	1460.0	2000.0	2220.0
33	1500.0	1520.0	1400.0	1841.0	2240.0
34	1480.0	1400.0	1746.0	2218.0	2056.0
35	1460.0	1200.0	1640.0	1960.0	2220.0
36	1440.0	1463.0	1380.0	1900.0	2405.0

STACK # 1--SHAWVILLE STACKS 1&2 COAL-TSP
STACK # 2--SHAWVILLE STACK 3 AND 4 COAL-TSP NORMAL LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	83.00	0.00	182.88	3.81	21.82	391.00	248.77
2	NOM	269.00	0.00	99.06	3.73	18.84	386.00	205.87

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.26 1.09 0.98 0.87 1.10 0.92 0.87 1.08 0.98 0.80 1.05 1.00

YEAR BASED ON 365. DAYS

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

MAXIMUM MEAN CONC= 8.0150E-05 DIRECTION= 10 DISTANCE= 0.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1		7.82884E-05	7.86391E-05	7.73473E-05	7.63060E-05	7.57553E-05
2		7.88710E-05	7.91836E-05	7.76793E-05	7.65387E-05	7.59832E-05
3		7.91370E-05	7.94290E-05	7.84956E-05	7.77073E-05	7.68058E-05
4		7.88309E-05	7.90852E-05	7.84103E-05	7.77183E-05	7.67414E-05
5		7.82316E-05	7.84473E-05	7.81507E-05	7.76017E-05	7.66321E-05
6		7.81096E-05	7.82598E-05	7.82848E-05	7.77592E-05	7.66949E-05
7		7.85449E-05	7.87132E-05	7.90263E-05	7.84902E-05	7.70635E-05
8		7.92546E-05	7.94522E-05	7.95092E-05	7.87119E-05	7.72219E-05
9		7.98836E-05	7.98362E-05	7.93962E-05	7.84656E-05	7.70808E-05
10		8.01503E-05	7.96401E-05	7.88218E-05	7.78821E-05	7.67609E-05
11		7.97293E-05	7.88240E-05	7.78235E-05	7.70362E-05	7.61918E-05
12		7.87222E-05	7.79945E-05	7.73074E-05	7.67321E-05	7.60520E-05
13		7.76778E-05	7.72884E-05	7.66970E-05	7.63099E-05	7.59622E-05
14		7.69044E-05	7.67608E-05	7.62952E-05	7.59672E-05	7.56139E-05
15		7.63928E-05	7.63765E-05	7.60341E-05	7.58454E-05	7.55406E-05
16		7.60090E-05	7.59780E-05	7.56693E-05	7.54690E-05	7.52933E-05
17		7.57726E-05	7.57668E-05	7.55886E-05	7.55198E-05	7.53389E-05
18		7.55982E-05	7.56134E-05	7.54629E-05	7.53808E-05	7.52570E-05
19		7.54653E-05	7.54735E-05	7.54382E-05	7.53915E-05	7.52633E-05
20		7.54198E-05	7.54211E-05	7.52986E-05	7.52185E-05	7.51585E-05
21		7.53934E-05	7.54026E-05	7.52838E-05	7.52175E-05	7.51349E-05
22		7.53926E-05	7.54399E-05	7.53551E-05	7.53107E-05	7.52351E-05
23		7.54903E-05	7.56326E-05	7.55141E-05	7.55019E-05	7.54261E-05
24		7.56709E-05	7.59567E-05	7.58689E-05	7.59558E-05	7.57974E-05
25		7.58203E-05	7.62075E-05	7.63283E-05	7.65602E-05	7.62607E-05
26		7.58754E-05	7.62005E-05	7.60968E-05	7.61060E-05	7.59320E-05
27		7.59062E-05	7.60996E-05	7.59590E-05	7.60505E-05	7.58834E-05
28		7.61533E-05	7.63118E-05	7.61967E-05	7.61940E-05	7.58391E-05
29		7.67533E-05	7.68541E-05	7.67932E-05	7.68337E-05	7.62923E-05
30		7.73224E-05	7.72311E-05	7.68387E-05	7.65705E-05	7.60039E-05
31		7.73340E-05	7.71350E-05	7.66354E-05	7.62048E-05	7.57603E-05
32		7.69041E-05	7.67426E-05	7.62050E-05	7.58523E-05	7.55771E-05
33		7.64270E-05	7.63747E-05	7.59899E-05	7.56993E-05	7.54496E-05
34		7.61999E-05	7.62086E-05	7.58835E-05	7.56786E-05	7.55131E-05
35		7.62113E-05	7.62036E-05	7.58454E-05	7.55660E-05	7.54013E-05
36		7.93230E-05	7.95002E-05	7.75879E-05	7.62748E-05	7.56867E-05

PENN. ELECTRIC CO. SHAWVILLE

NOX--SO2

YEARLY MAXIMUM 24-HOUR CONC= 2.0097E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.2048E-04 (150)	1.1927E-04 (173)	1.0185E-04 (173)	9.2128E-05 (165)	9.0724E-05 (283)
2	1.3222E-04 (140)	1.1868E-04 (140)	1.0035E-04 (265)	9.0695E-05 (265)	9.0125E-05 (7)
3	1.4751E-04 (237)	1.2477E-04 (237)	1.1399E-04 (306)	1.3140E-04 (306)	1.1304E-04 (306)
4	1.4109E-04 (151)	1.2106E-04 (151)	1.1983E-04 (56)	1.1782E-04 (56)	1.0282E-04 (23)
5	1.4027E-04 (131)	1.1449E-04 (131)	1.1205E-04 (11)	1.0614E-04 (330)	9.9545E-05 (242)
6	1.2672E-04 (221)	1.1533E-04 (221)	1.2676E-04 (19)	1.2254E-04 (19)	9.8674E-05 (19)
7	1.3476E-04 (221)	1.1776E-04 (221)	1.3353E-04 (14)	1.3186E-04 (14)	1.1270E-04 (4)
8	1.2702E-04 (256)	1.1048E-04 (90)	1.4039E-04 (44)	1.3288E-04 (44)	1.0938E-04 (45)
9	1.3319E-04 (230)	1.1980E-04 (256)	1.3056E-04 (30)	1.3755E-04 (30)	1.1464E-04 (30)
10	1.6221E-04 (230)	1.2880E-04 (230)	1.6691E-04 (94)	1.3901E-04 (94)	1.2063E-04 (318)
11	1.5395E-04 (230)	1.2279E-04 (230)	1.2954E-04 (79)	1.2982E-04 (79)	1.0383E-04 (79)
12	1.4553E-04 (239)	1.1619E-04 (67)	1.2732E-04 (67)	1.1502E-04 (67)	9.4331E-05 (96)
13	1.3226E-04 (67)	1.1254E-04 (136)	1.0680E-04 (2)	1.0253E-04 (2)	9.6608E-05 (303)
14	1.4772E-04 (122)	1.1617E-04 (136)	1.0407E-04 (122)	9.7546E-05 (302)	9.3415E-05 (302)
15	1.3354E-04 (122)	1.1260E-04 (220)	1.1359E-04 (86)	1.1028E-04 (86)	9.5426E-05 (86)
16	1.2436E-04 (219)	1.1168E-04 (219)	9.3308E-05 (219)	9.4851E-05 (34)	8.8699E-05 (34)
17	1.3301E-04 (219)	1.1651E-04 (219)	9.4087E-05 (219)	8.9817E-05 (33)	8.8126E-05 (31)
18	1.2809E-04 (127)	1.2137E-04 (127)	9.8361E-05 (20)	1.0475E-04 (20)	9.2617E-05 (20)
19	1.3679E-04 (127)	1.1891E-04 (127)	9.8538E-05 (20)	1.0170E-04 (20)	9.5550E-05 (218)
20	1.3732E-04 (127)	1.1299E-04 (127)	9.7718E-05 (218)	9.3927E-05 (218)	8.6432E-05 (218)
21	1.2248E-04 (127)	1.0720E-04 (180)	9.4615E-05 (218)	8.6284E-05 (180)	8.2032E-05 (180)
22	1.2369E-04 (180)	1.0913E-04 (180)	1.0053E-04 (218)	1.0014E-04 (218)	8.9136E-05 (218)
23	1.1240E-04 (180)	1.0605E-04 (291)	1.0264E-04 (291)	1.0768E-04 (291)	1.0406E-04 (291)
24	1.1576E-04 (176)	1.2055E-04 (176)	1.1335E-04 (291)	1.0631E-04 (33)	1.0182E-04 (33)
25	1.0830E-04 (176)	1.1358E-04 (176)	1.3146E-04 (73)	1.4156E-04 (73)	1.1392E-04 (73)
26	1.1219E-04 (145)	1.1496E-04 (145)	9.6239E-05 (145)	1.0351E-04 (28)	1.0717E-04 (268)
27	1.0398E-04 (145)	1.1283E-04 (178)	9.9831E-05 (178)	1.0376E-04 (121)	1.0646E-04 (121)
28	1.1101E-04 (120)	1.0531E-04 (178)	9.5897E-05 (244)	1.1332E-04 (121)	1.0550E-04 (121)
29	1.3495E-04 (120)	1.1523E-04 (120)	1.1634E-04 (243)	1.2195E-04 (243)	1.0871E-04 (244)
30	1.3678E-04 (120)	1.1860E-04 (120)	1.0460E-04 (120)	1.0899E-04 (8)	9.5749E-05 (142)
31	1.5209E-04 (137)	1.2245E-04 (137)	1.2378E-04 (123)	1.2850E-04 (123)	1.0523E-04 (123)
32	1.3448E-04 (137)	1.0836E-04 (137)	9.4450E-05 (272)	9.8034E-05 (6)	9.1144E-05 (6)
33	1.1737E-04 (258)	1.0582E-04 (250)	9.2041E-05 (258)	9.0110E-05 (71)	8.8621E-05 (71)
34	1.2115E-04 (258)	1.0308E-04 (258)	8.9254E-05 (211)	9.1876E-05 (53)	9.2688E-05 (53)
35	1.1281E-04 (168)	1.0272E-04 (187)	9.6589E-05 (11)	9.2526E-05 (11)	8.5160E-05 (146)
36	2.0097E-04 (150)	1.6077E-04 (195)	1.1989E-04 (195)	9.8579E-05 (195)	9.0180E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 5.0131E-04 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	3.0191E-04 (146)	2.3313E-04 (146)	1.8504E-04 (228)	1.6745E-04 (165)	1.6440E-04 (283)
2	3.1542E-04 (238)	2.6126E-04 (140)	2.1542E-04 (307)	1.8221E-04 (17)	1.7873E-04 (7)
3	3.1354E-04 (237)	2.5798E-04 (237)	2.2523E-04 (3)	2.7548E-04 (306)	2.0544E-04 (306)
4	3.1474E-04 (131)	2.8712E-04 (23)	2.1328E-04 (15)	2.2235E-04 (15)	2.2756E-04 (23)
5	2.6868E-04 (131)	2.3548E-04 (124)	2.4054E-04 (18)	2.5827E-04 (242)	2.3020E-04 (242)
6	2.9910E-04 (236)	2.2568E-04 (14)	2.4094E-04 (18)	2.2996E-04 (1)	1.7255E-04 (37)
7	2.7852E-04 (221)	2.3736E-04 (14)	2.3381E-04 (16)	2.2586E-04 (14)	2.0367E-04 (308)
8	2.9279E-04 (245)	2.4846E-04 (30)	2.3847E-04 (9)	2.4815E-04 (4)	1.9645E-04 (45)
9	3.0412E-04 (224)	2.4703E-04 (30)	2.4218E-04 (9)	2.4775E-04 (42)	2.0066E-04 (42)
10	3.2535E-04 (230)	2.4585E-04 (42)	2.3518E-04 (2)	2.4006E-04 (326)	1.9458E-04 (326)
11	3.2358E-04 (239)	2.4350E-04 (147)	2.1066E-04 (337)	2.0219E-04 (79)	1.8242E-04 (22)
12	3.1619E-04 (239)	2.1852E-04 (229)	1.9636E-04 (67)	2.0423E-04 (252)	1.7095E-04 (318)
13	2.8049E-04 (136)	2.3303E-04 (2)	2.1507E-04 (2)	2.2158E-04 (2)	1.5546E-04 (13)
14	3.0337E-04 (136)	2.3923E-04 (220)	1.8850E-04 (340)	1.9869E-04 (340)	1.5330E-04 (13)
15	2.9282E-04 (122)	2.3820E-04 (34)	2.0374E-04 (34)	2.2983E-04 (19)	1.8016E-04 (19)
16	2.7735E-04 (219)	2.1807E-04 (220)	2.0132E-04 (126)	2.1322E-04 (126)	1.4678E-04 (126)
17	2.9966E-04 (219)	2.3358E-04 (219)	1.7112E-04 (185)	1.7839E-04 (20)	1.4047E-04 (19)
18	2.9394E-04 (219)	2.3846E-04 (127)	1.6728E-04 (214)	2.3048E-04 (20)	1.7040E-04 (20)
19	2.6311E-04 (127)	2.0532E-04 (127)	1.6445E-04 (20)	1.7736E-04 (20)	1.6942E-04 (218)
20	3.1173E-04 (127)	2.2443E-04 (127)	1.9802E-04 (20)	1.7394E-04 (218)	1.4009E-04 (218)
21	2.7036E-04 (127)	2.0532E-04 (218)	1.6420E-04 (218)	1.5688E-04 (72)	1.3253E-04 (87)
22	2.7511E-04 (180)	2.1105E-04 (180)	1.8141E-04 (218)	1.7354E-04 (218)	1.5505E-04 (291)
23	2.3510E-04 (176)	1.9836E-04 (291)	1.7483E-04 (291)	1.7693E-04 (291)	1.9115E-04 (291)
24	2.6006E-04 (176)	2.3882E-04 (32)	2.2371E-04 (291)	1.9788E-04 (242)	1.8689E-04 (28)
25	2.5294E-04 (235)	2.6049E-04 (235)	1.9655E-04 (73)	2.1147E-04 (32)	1.9158E-04 (43)
26	3.0022E-04 (145)	2.2585E-04 (69)	1.9139E-04 (69)	2.1677E-04 (28)	2.2370E-04 (28)
27	2.7798E-04 (145)	2.3402E-04 (191)	1.6858E-04 (35)	2.1915E-04 (227)	1.8838E-04 (227)
28	2.4089E-04 (161)	1.8949E-04 (178)	1.9506E-04 (334)	2.1812E-04 (10)	1.8020E-04 (121)
29	2.6164E-04 (21)	2.2287E-04 (244)	2.0773E-04 (76)	2.3847E-04 (243)	1.9445E-04 (243)
30	3.3180E-04 (21)	2.4891E-04 (21)	1.8929E-04 (244)	2.3889E-04 (8)	1.7344E-04 (87)
31	3.3037E-04 (137)	2.3495E-04 (333)	2.3046E-04 (10)	3.0448E-04 (10)	2.2516E-04 (10)
32	2.8293E-04 (137)	2.2811E-04 (334)	1.7566E-04 (6)	1.7903E-04 (6)	1.6084E-04 (6)
33	2.9243E-04 (250)	2.2494E-04 (250)	1.7261E-04 (149)	1.5917E-04 (149)	1.5286E-04 (71)
34	2.9944E-04 (135)	2.3168E-04 (150)	1.7790E-04 (11)	2.0142E-04 (53)	1.8468E-04 (53)
35	2.7803E-04 (135)	2.0424E-04 (59)	1.9331E-04 (11)	1.7234E-04 (11)	1.3270E-04 (259)
36	5.0131E-04 (150)	3.4775E-04 (150)	2.2054E-04 (298)	1.7525E-04 (298)	1.2921E-04 (232)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	2.0087E-04	36	0.83
94	1.6691E-04	10	3.32
230	1.6221E-04	10	0.83
195	1.6077E-04	36	1.66
173	1.6031E-04	36	1.66
137	1.5209E-04	31	0.83
197	1.4957E-04	36	1.66
239	1.4940E-04	11	0.83
191	1.4937E-04	36	1.66
127	1.4772E-04	14	0.83
237	1.4751E-04	1	0.83
247	1.4696E-04	11	0.83
189	1.4519E-04	36	0.83
111	1.4241E-04	17	0.83
103	1.4170E-04	12	0.83
73	1.4156E-04	25	6.65
151	1.4109E-04	4	0.83
148	1.4100E-04	10	0.83
136	1.4097E-04	14	0.83
166	1.4082E-04	31	0.83

PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY PROJECT 7101

COAL MAXIMUM CONDITION

STACK # 1--SHAWVILLE STACK 1 (MAX. COND.) COAL TSP
STACK # 2--SHAWVILLE STACK 3&4 COAL TSP MAXIMUM LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	107.00	0.00	182.88	1.81	29.38	403.00	334.96
2	NOM	322.00	0.00	99.06	3.73	22.57	396.00	246.08

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 3 JDAY= 73
ISTAR= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 7.2 7.2 9.8 8.9 8.9 8.5 8.5 8.1 8.9 8.9 9.8 10.3 8.1 7.6 6.3 5.8 5.8 5.8 4.5 4.5 4.0 3.1 3.1 2.2
TEMP= 271. 271. 270. 270. 270. 269. 268. 268. 268. 269. 269. 269. 270. 270. 270. 270. 270. 269. 269. 270. 270. 270. 270. 269.
AFV= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
AFVR= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
HLH1= 801. 801. 801. 801. 801. 801. 770. 739. 708. 677. 646. 615.
584. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553.

JYR=75 IHO= 4 JDAY= 94
ISTAR= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 14.8 13.4 16.1 15.6 12.5 12.5 11.6 12.1 14.8 16.1 15.6 17.4 16.1 15.6 15.6 15.2 15.2 14.8 12.5 10.3 9.4 9.8 10.7 9.8
TEMP= 268. 267. 267. 267. 266. 266. 266. 267. 267. 267. 268. 269. 269. 268. 268. 268. 267. 267. 266. 266. 266. 266. 266.
AFV= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
AFVR= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
HLH1= 600. 600. 600. 600. 600. 600. 600. 720. 840. 960. 1080. 1170.
1290. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.

JYR=75 IHO= 4 JDAY=103
ISTAR= 4 4 4 4 4 4 4 3 2 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.4 5.4 5.8 6.3 5.8 5.4 4.5 4.0 5.4 6.7 6.3 6.3 7.2 7.2 7.2 6.7 5.8 5.4 5.4 5.8 5.8 5.4 4.5 3.6
TEMP= 270. 269. 269. 269. 267. 267. 267. 270. 273. 274. 275. 275. 275. 275. 276. 277. 278. 279. 276. 274. 273. 272. 271. 270.
AFV= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
AFVR= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
HLH1= 822. 822. 822. 822. 822. 822. 1039. 1257. 1474. 1692. 1909. 2127.
2344. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561.

JYR=75 IHO= 4 JDAY=111
ISTAR= 3 3 3 3 3 4 3 3 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.8 5.8 8.5 6.7 6.3 4.5 4.9 7.2 8.1 8.1 8.1 7.2 7.6 7.2 7.2 8.1 7.2 6.7 6.3 6.3 5.4 6.3 2.7 3.1
TEMP= 275. 275. 275. 274. 274. 272. 273. 274. 275. 275. 276. 277. 279. 280. 281. 281. 282. 281. 280. 277. 276. 275. 274. 274.
AFV= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
AFVR= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
HLH1= 2000. 2000. 2000. 2000. 2000. 2000. 2002. 2005. 2008. 2010. 2013. 2016.
2019. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021.

```
JYR=75 IHR= 5 JDAY=122
ISTAB=  3    3    4    4    4    4    4    3    2    2    1    1    1    1    1    1    1    1    3    3    4    4    4    4
AWS=  1.8  1.3  0.4  1.3  3.1  4.5  4.9  6.3  6.7  6.7  7.2  7.2  7.2  6.3  6.3  6.7  8.1  7.6  1.8  6.7  3.1  2.7  2.2  2.2
TEMP= 280. 280. 280. 280. 280. 281. 282. 284. 285. 285. 287. 288. 289. 290. 291. 291. 291. 291. 289. 287. 283. 283. 281. 281.
AFV=  257. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
AFVR= 252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
HLHI=  598.  598.  598.  598.  598.  598.  723.  848.  973. 1098. 1223. 1347.
      1472. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597.


JYR=75 IHR= 5 JDAY=136
ISTAB=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  1.8  2.7  3.1  4.0  2.7  2.2  3.6  4.0  4.0  4.9  4.5  5.4  4.0  4.9  4.9  4.9  4.5  4.9  5.4  5.8  4.9  4.5  4.5  4.9
TEMP= 286. 286. 285. 285. 285. 285. 286. 288. 289. 291. 292. 294. 294. 295. 295. 295. 295. 292. 290. 288. 286. 285. 284.
AFV=   32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
AFVR=  32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
HLHI= 1188. 1188. 1188. 1188. 1188. 1188. 1166. 1145. 1123. 1102. 1080. 1059.
      1037. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016.


JYR=75 IHR= 5 JDAY=137
ISTAB=  4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    1    2    3    3    3    4    4    4
AWS=  3.6  4.0  2.7  3.1  4.5  5.4  6.7  5.8  5.4  4.5  5.4  5.8  5.4  5.8  6.3  5.4  5.4  5.8  4.5  6.7  7.2  4.0  3.1  3.6
TEMP= 293. 292. 291. 290. 279. 279. 281. 285. 288. 291. 294. 295. 297. 296. 296. 295. 295. 294. 292. 291. 289. 288. 287. 287.
AFV=  245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   0. 351. 335. 329.
AFVR= 245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   0. 351. 335. 329.
HLHI=  312.  312.  312.  312.  312.  312.  439.  566.  693.  820.  947. 1074.
      1200. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IHR= 5 JDAY=148
ISTAB=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  3.1  1.3  2.7  2.7  2.7  2.7  3.1  3.1  1.8  3.1  4.9  5.4  4.5  4.5  4.0  4.0  4.0  3.6  4.0  5.8  6.7  4.5  2.2  2.2
TEMP= 284. 283. 282. 281. 280. 280. 282. 286. 289. 291. 292. 293. 295. 296. 297. 298. 298. 298. 296. 293. 290. 289. 287. 285.
AFV=  137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
AFVR= 137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
HLHI=  473.  473.  473.  473.  473.  473.  633.  792.  952. 1111. 1271. 1431.
      1590. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750.


JYR=75 IHR= 5 JDAY=150
ISTAB=  4    3    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    2    3    3    4    4    4
AWS=  5.8  7.6  6.7  6.7  7.2  6.3  7.6  6.3  3.1  4.0  4.9  4.0  4.0  4.5  4.9  4.5  5.4  3.1  4.0  3.1  3.1  4.9  4.5  3.6
TEMP= 283. 283. 283. 283. 283. 283. 283. 283. 293. 294. 294. 295. 297. 300. 299. 299. 299. 297. 296. 294. 294. 293. 293. 292.
AFV=   30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   5.  13.   4.   6.   9. 351. 344. 337. 348. 353.   9.  14.  33.  29.
AFVR=  30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   5.  13.   4.   6.   9. 351. 344. 337. 348. 353.   9.  14.  33.  29.
HLHI=  982.  982.  982.  982.  982.  982. 1018. 1055. 1092. 1128. 1165. 1201.
      1238. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275.


JYR=75 IHR= 5 JDAY=151
ISTAB=  4    4    4    4    4    4    4    3    2    2    1    1    1    1    1    3    2    3    4    4    3    4    4    4
AWS=  3.6  2.2  3.1  4.0  4.0  5.4  5.8  5.8  7.7  6.7  8.1  8.1  8.5  8.9  9.4  5.8  4.9  3.6  4.0  3.6  5.4  4.5  4.5  5.4
TEMP= 291. 291. 291. 290. 290. 290. 290. 293. 295. 295. 297. 297. 298. 299. 299. 297. 297. 297. 296. 295. 294. 293. 292. 291.
AFV=   23.  22.  20.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
AFVR=  23.  22.  20.  28.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
HLHI=  863.  863.  863.  863.  863.  863.  911.  960. 1008. 1057. 1105. 1153.
      1202. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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JYR=75 I4D= 6 JDAY=[illegible]
ISTAR=  4   4   4   4   4   4   4   3   1   1   1   1   1   1   1   1   1   1   1   2   3   4   4   3   4
AWS=  1.8  1.8  1.8  0.9  0.9  2.7  3.1  1.8  1.3  3.6  4.5  6.7  8.5  8.5  9.4  8.9  9.4  7.2  7.2  7.2  7.6  7.2  8.5  6.3
TEMP= 288. 287. 287. 287. 286. 286. 288. 290. 294. 297. 300. 301. 301. 302. 301. 301. 301. 300. 299. 298. 296. 296. 294. 290.
AFV=  352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
AFVR= 352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
HLHI=  356.  356.  356.  356.  356.  356.  515.  673.  832.  990. 1149. 1308.
      1466. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625.


JYR=75 I4D= 6 JDAY=171
ISTAR=  4   4   4   4   4   4   4   1   1   1   1   1   1   1   1   1   1   1   1   1   4   4   4   4   4
AWS=  0.4  2.2  2.2  2.2  1.3  0.0  0.0  0.9  1.3  2.2  2.7  2.7  3.1  2.7  2.2  1.3  3.1  1.6  2.2  3.1  3.6  3.1  3.1  2.7
TEMP= 288. 287. 287. 286. 286. 286. 288. 292. 295. 297. 299. 301. 302. 302. 302. 304. 303. 300. 299. 296. 295. 294. 294. 292.
AFV=  211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
AFVR= 211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   8.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
HLHI=  340.  340.  340.  340.  340.  340.  458.  577.  695.  814.  932. 1051.
      1169. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288.


JYR=75 I4D= 7 JDAY=189
ISTAR=  4   4   4   4   4   4   4   3   1   1   1   1   1   1   1   1   1   1   1   3   4   4   4   4   4
AWS=  1.3  1.3  1.3  1.8  1.8  1.8  0.4  2.7  1.8  1.3  1.3  2.7  2.7  2.7  3.6  2.7  3.6  4.5  4.5  3.1  1.3  2.7  2.2  3.1
TEMP= 289. 289. 288. 288. 288. 288. 288. 290. 291. 294. 298. 300. 302. 303. 301. 300. 301. 299. 297. 296. 295. 294. 294. 293.
AFV=  342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
AFVR= 342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
HLHI=  609.  609.  609.  609.  609.  609.  750.  890. 1031. 1171. 1312. 1453.
      1593. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734.


JYR=75 I4D= 7 JDAY=191
ISTAR=  4   4   4   4   4   4   4   1   1   1   1   1   1   1   1   1   1   1   2   2   3   3   4   4   4
AWS=  1.4  1.8  0.9  1.3  0.9  1.3  2.2  0.4  0.4  1.3  2.2  2.2  2.7  4.0  2.7  4.0  3.1  4.5  5.4  1.0  1.0  1.0  1.3  2.7
TEMP= 289. 287. 286. 285. 285. 284. 287. 290. 293. 296. 297. 297. 298. 299. 301. 301. 283. 283. 283. 283. 283. 283. 287. 287.
AFV=   19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
AFVR=  19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
HLHI=  542.  542.  542.  542.  542.  542.  716.  890. 1065. 1239. 1413. 1588.
      1762. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936.


JYR=75 I4D= 7 JDAY=195
ISTAR=  3   3   4   4   4   4   4   3   1   1   1   1   1   1   1   3   1   1   3   4   4   4   4   4   4
AWS=  2.2  2.2  2.7  2.7  1.8  1.3  1.3  1.3  1.3  2.7  3.6  3.6  3.6  3.1  3.6  4.0  3.6  3.6  3.1  2.7  1.8  0.4  0.9  2.2
TEMP= 291. 290. 290. 290. 290. 290. 290. 290. 291. 292. 293. 296. 297. 299. 299. 295. 297. 297. 294. 292. 292. 292. 291. 291. 291.
AFV=  323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
AFVR= 323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  27. 347. 302. 337.  44.  52.
HLHI=  660.  660.  660.  660.  660.  660.  743.  827.  910.  994. 1077. 1160.
      1244. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 I4D= 7 JDAY=197
ISTAR=  4   4   4   4   4   4   4   3   1   1   1   1   1   1   1   1   1   1   3   4   4   4   4   4   4
AWS=  3.1  4.0  2.2  0.4  0.0  0.0  0.4  0.4  1.3  2.7  2.7  3.6  2.7  2.7  2.2  2.2  3.1  3.1  3.1  3.1  0.9  2.2  1.8  0.9
TEMP= 291. 291. 291. 291. 291. 291. 291. 292. 293. 294. 296. 299. 299. 298. 301. 301. 301. 300. 299. 297. 295. 295. 294. 293. 292.
AFV=  259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
AFVR= 259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
HLHI=  640.  640.  640.  640.  640.  640.  837. 1024. 1216. 1408. 1600. 1793.
      1985. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177.
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JYR=75 IHO= 8 JDAY=230
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  4.0  3.6  4.0  4.0  4.5  5.4  4.5  3.6  4.0  5.4  5.8  5.4  5.8  6.3  7.2  6.3  6.3  5.8  6.3  6.7  7.6  6.7  3.1  3.6
TEMP= 290. 290. 289. 289. 289. 289. 290. 291. 292. 293. 294. 295. 296. 296. 297. 297. 297. 298. 297. 295. 292. 291. 290. 289. 288.
AFV=   40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
AFVR=  40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
HLHI=  967.  967.  967.  967.  967.  967. 1073. 1179. 1284. 1390. 1496. 1601.
      1707. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813.


JYR=75 IHO= 8 JDAY=237
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    2    2    3    4    4    4    4    4
AWS=  7.6  5.8  4.5  4.0  4.9  4.9  4.5  4.0  4.5  4.0  4.0  5.8  5.4  6.7  8.1  8.5  8.5  7.6  7.2  6.3  4.9  4.5  4.9  4.0
TEMP= 295. 294. 294. 293. 293. 292. 293. 294. 296. 297. 299. 300. 301. 302. 301. 302. 301. 301. 299. 298. 296. 295. 294. 293.
AFV=   47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
AFVR=  47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
HLHI=  501.  501.  501.  501.  501.  501.  538.  574.  611.  648.  684.  721.
       758.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.


JYR=75 IHO= 8 JDAY=239
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  6.3  5.4  4.5  3.6  2.7  3.6  4.0  3.1  2.2  3.6  4.9  6.7  8.1  7.6  6.3  7.2  6.3  5.4  6.7  7.2  6.3  4.9  4.9  3.6
TEMP= 290. 290. 289. 288. 288. 287. 287. 288. 290. 294. 296. 297. 298. 298. 299. 299. 299. 299. 296. 293. 291. 289. 287. 286.
AFV=  114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
AFVR= 114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
HLHI=  439.  439.  439.  439.  439.  439.  544.  649.  754.  859.  965. 1070.
      1175. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280.


JYR=75 IHO= 9 JDAY=247
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4    4
AWS=  0.4  0.4  1.3  2.7  3.1  4.5  4.0  4.0  5.4  6.7  6.7  6.7  6.7  7.2  8.1  7.2  7.2  8.5  6.3  5.4  4.0  4.9  6.3  4.5
TEMP= 286. 286. 286. 286. 286. 287. 287. 288. 290. 291. 293. 294. 295. 296. 295. 295. 295. 294. 291. 290. 288. 288. 286. 285.
AFV=   47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
AFVR=  47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
HLHI=   35.   35.   35.   35.   35.   35.  172.  308.  445.  581.  718.  855.
       991. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128.


YEAR BASED ON  20. DAYS
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PENN. ELECTRIC CO. SHAWVILLE

NOX--SO2

MAXIMUM MEAN CONC= 1.01344E-04 DIRECTION= 36 DISTANCE= 1.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.8 KM	1.7 KM	3.1 KM	6.7 KM	13.3 KM
1		8.64453E-05	8.78754E-05	8.25042E-05	7.90923E-05	7.73102E-05
2		8.37623E-05	8.34240E-05	7.94500E-05	7.73948E-05	7.65355E-05
3		8.27498E-05	8.15938E-05	7.88346E-05	7.72816E-05	7.63961E-05
4		8.19397E-05	8.04831E-05	7.82580E-05	7.67776E-05	7.58754E-05
5		7.90254E-05	7.80504E-05	7.68544E-05	7.59795E-05	7.56425E-05
6		7.64464E-05	7.60212E-05	7.55984E-05	7.52813E-05	7.52725E-05
7		7.60094E-05	7.56013E-05	7.54047E-05	7.52205E-05	7.51103E-05
8		7.80569E-05	7.66470E-05	7.59654E-05	7.58120E-05	7.54673E-05
9		8.34187E-05	8.00084E-05	7.76284E-05	7.62897E-05	7.55913E-05
10		9.16682E-05	8.71456E-05	8.50394E-05	8.14248E-05	7.81383E-05
11		9.75556E-05	8.86649E-05	8.13804E-05	7.82999E-05	7.67731E-05
12		9.61367E-05	8.69375E-05	8.04404E-05	7.7773RE-05	7.63525E-05
13		9.07002E-05	8.39571E-05	7.86835E-05	7.63552E-05	7.55776E-05
14		8.55565E-05	8.11010E-05	7.82238E-05	7.71888E-05	7.62018E-05
15		8.18257E-05	7.89493E-05	7.67800E-05	7.59282E-05	7.54712E-05
16		7.85567E-05	7.69375E-05	7.56911E-05	7.5256RE-05	7.51206E-05
17		7.62898E-05	7.56420E-05	7.52073E-05	7.50740E-05	7.50327E-05
18		7.53979E-05	7.52986E-05	7.5304RE-05	7.53376E-05	7.51940E-05
19		7.52477E-05	7.54192E-05	7.52692E-05	7.5106RE-05	7.50501E-05
20		7.50976E-05	7.5158RE-05	7.50850E-05	7.50265E-05	7.50093E-05
21		7.50094E-05	7.50095E-05	7.5002RE-05	7.50004E-05	7.50001E-05
22		7.50004E-05	7.50001E-05	7.50016E-05	7.50012E-05	7.50002E-05
23		7.50031E-05	7.50019E-05	7.50503E-05	7.50773E-05	7.50352E-05
24		7.50359E-05	7.50462E-05	7.55770E-05	7.62424E-05	7.60873E-05
25		7.52255E-05	7.55032E-05	7.77135E-05	7.86972E-05	7.73605E-05
26		7.55637E-05	7.57677E-05	7.63449E-05	7.63505E-05	7.59273E-05
27		7.57153E-05	7.56057E-05	7.55079E-05	7.54102E-05	7.54190E-05
28		7.60248E-05	7.56257E-05	7.52460E-05	7.51076E-05	7.50521E-05
29		7.74632E-05	7.63060E-05	7.54533E-05	7.52514E-05	7.54763E-05
30		8.06702E-05	7.81105E-05	7.61175E-05	7.5391RE-05	7.51807E-05
31		8.33792E-05	7.99939E-05	7.69691E-05	7.57233E-05	7.53561E-05
32		8.24990E-05	7.97390E-05	7.69886E-05	7.58440E-05	7.56292E-05
33		7.98695E-05	7.85564E-05	7.71925E-05	7.65717E-05	7.58837E-05
34		7.88644E-05	7.84653E-05	7.67997E-05	7.57237E-05	7.53302E-05
35		8.00047E-05	7.97356E-05	7.75313E-05	7.63475E-05	7.57526E-05
36		9.96482E-05	1.01344E-04	8.86227E-05	8.12827E-05	7.82990E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 1.9452E-04 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	1.1757E-04 (150)	1.2311E-04 (197)	1.0672E-04 (173)	9.4730E-05 (173)	8.6966E-05 (173)
2	1.2942E-04 (237)	1.0823E-04 (237)	9.2408E-05 (197)	8.5645E-05 (197)	8.2445E-05 (197)
3	1.4662E-04 (237)	1.2506E-04 (237)	1.0200E-04 (237)	9.3510E-05 (237)	8.6898E-05 (237)
4	1.4052E-04 (151)	1.2042E-04 (151)	1.0139E-04 (237)	9.0510E-05 (237)	8.2898E-05 (237)
5	1.2267E-04 (151)	1.0549E-04 (151)	8.7612E-05 (151)	8.0525E-05 (166)	7.9553E-05 (239)
6	9.2174E-05 (151)	8.3868E-05 (151)	7.8430E-05 (189)	7.7321E-05 (189)	7.8531E-05 (148)
7	8.2353E-05 (148)	7.8944E-05 (148)	7.9995E-05 (189)	7.8615E-05 (189)	7.6937E-05 (189)
8	9.9170E-05 (230)	8.9464E-05 (148)	8.0990E-05 (111)	8.6060E-05 (111)	8.2007E-05 (111)
9	1.3363E-04 (230)	1.0786E-04 (230)	8.7279E-05 (230)	8.3649E-05 (94)	7.9110E-05 (94)
10	1.6262E-04 (230)	1.2941E-04 (230)	1.0580E-04 (94)	1.5892E-04 (94)	1.1364E-04 (94)
11	1.5966E-04 (111)	1.2378E-04 (247)	1.0259E-04 (247)	9.6286E-05 (247)	8.8276E-05 (247)
12	1.6103E-04 (111)	1.2275E-04 (111)	1.0030E-04 (111)	9.1963E-05 (111)	8.3832E-05 (111)
13	1.4430E-04 (103)	1.1560E-04 (103)	9.1759E-05 (103)	8.2027E-05 (136)	7.8438E-05 (136)
14	1.4819E-04 (122)	1.1613E-04 (136)	1.0122E-04 (122)	9.5071E-05 (122)	8.5626E-05 (122)
15	1.3978E-04 (122)	1.1139E-04 (122)	9.0392E-05 (122)	8.1748E-05 (148)	7.8794E-05 (148)
16	1.0973E-04 (122)	9.5266E-05 (136)	8.2475E-05 (136)	7.8187E-05 (136)	7.6580E-05 (136)
17	8.9923E-05 (136)	8.3421E-05 (136)	7.7926E-05 (136)	7.6155E-05 (136)	7.5531E-05 (136)
18	8.1015E-05 (136)	8.0336E-05 (136)	8.0956E-05 (136)	8.1723E-05 (136)	7.8872E-05 (136)
19	7.9758E-05 (136)	8.3335E-05 (136)	8.0377E-05 (136)	7.7135E-05 (136)	7.6003E-05 (136)
20	7.6943E-05 (136)	7.8174E-05 (136)	7.6699E-05 (136)	7.5531E-05 (136)	7.5186E-05 (136)
21	7.5189E-05 (136)	7.5190E-05 (136)	7.5056E-05 (136)	7.5008E-05 (136)	7.5001E-05 (136)
22	7.5004E-05 (136)	7.5002E-05 (136)	7.5032E-05 (166)	7.5024E-05 (166)	7.5005E-05 (166)
23	7.5061E-05 (137)	7.5024E-05 (137)	7.5959E-05 (166)	7.6530E-05 (166)	7.5702E-05 (166)
24	7.5714E-05 (137)	7.5544E-05 (137)	8.0032E-05 (73)	8.7885E-05 (73)	8.9075E-05 (73)
25	7.9435E-05 (137)	8.0438E-05 (73)	1.2600E-04 (73)	1.4650E-04 (73)	1.2113E-04 (73)
26	8.5786E-05 (137)	8.7353E-05 (137)	9.4479E-05 (73)	9.8318E-05 (73)	9.1583E-05 (73)
27	8.6664E-05 (137)	8.4714E-05 (137)	7.9767E-05 (73)	8.0137E-05 (73)	7.9607E-05 (166)
28	8.5708E-05 (137)	8.1133E-05 (137)	7.7430E-05 (166)	7.6070E-05 (137)	7.5520E-05 (166)
29	1.0087E-04 (166)	8.9070E-05 (166)	8.0198E-05 (166)	7.7103E-05 (166)	8.2981E-05 (195)
30	1.3028E-04 (166)	1.0450E-04 (137)	8.5777E-05 (137)	7.8916E-05 (137)	7.6817E-05 (137)
31	1.5485E-04 (166)	1.2280E-04 (137)	9.4569E-05 (137)	8.2655E-05 (137)	7.8724E-05 (137)
32	1.4579E-04 (166)	1.1393E-04 (166)	8.9717E-05 (166)	8.0065E-05 (166)	8.0524E-05 (195)
33	1.0935E-04 (166)	9.3089E-05 (166)	8.6277E-05 (166)	8.2851E-05 (166)	7.9788E-05 (137)
34	1.0138E-04 (150)	9.8766E-05 (150)	8.7703E-05 (150)	8.0095E-05 (150)	7.7310E-05 (150)
35	1.0672E-04 (150)	9.7038E-05 (150)	8.4675E-05 (197)	8.2193E-05 (150)	8.1064E-05 (150)
36	1.9452E-04 (150)	1.7422E-04 (195)	1.3084E-04 (195)	1.0481E-04 (195)	9.0205E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 4.7985E-04 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	2.5793E-04 (150)	2.4572E-04 (191)	1.6725E-04 (173)	1.4024E-04 (173)	1.2294E-04 (173)
2	3.0848E-04 (237)	2.0557E-04 (197)	1.5232E-04 (197)	1.0967E-04 (197)	1.1564E-04 (189)
3	3.0614E-04 (237)	2.5027E-04 (237)	1.8918E-04 (237)	1.6522E-04 (237)	1.4084E-04 (237)
4	3.1522E-04 (151)	2.4305E-04 (237)	1.8342E-04 (237)	1.4917E-04 (237)	1.1391E-04 (237)
5	2.4959E-04 (151)	1.9374E-04 (151)	1.3139E-04 (151)	1.1920E-04 (173)	1.1142E-04 (239)
6	1.4321E-04 (151)	1.1867E-04 (151)	1.0244E-04 (189)	9.3564E-05 (189)	1.0319E-04 (148)
7	1.2415E-04 (148)	1.0092E-04 (148)	1.1496E-04 (189)	1.0392E-04 (189)	9.0495E-05 (189)
8	2.1321E-04 (148)	1.5911E-04 (148)	1.2143E-04 (111)	1.6321E-04 (111)	1.3099E-04 (111)
9	2.9167E-04 (148)	2.1332E-04 (148)	1.6098E-04 (94)	1.4369E-04 (94)	1.0786E-04 (94)
10	3.2774E-04 (230)	2.2662E-04 (148)	2.0373E-04 (94)	1.8978E-04 (94)	1.3181E-04 (94)
11	3.2979E-04 (239)	2.1872E-04 (247)	1.5342E-04 (247)	1.5153E-04 (247)	1.3078E-04 (247)
12	3.2225E-04 (239)	2.0515E-04 (239)	1.4990E-04 (111)	1.3679E-04 (111)	1.0754E-04 (111)
13	2.9118E-04 (103)	2.2110E-04 (136)	1.5239E-04 (136)	1.0743E-04 (136)	9.0612E-05 (136)
14	3.0025E-04 (122)	2.1177E-04 (136)	1.5531E-04 (122)	1.5783E-04 (122)	1.1876E-04 (122)
15	2.9702E-04 (122)	1.9980E-04 (136)	1.2538E-04 (122)	1.2897E-04 (148)	1.0535E-04 (148)
16	2.3515E-04 (136)	1.7466E-04 (136)	1.1320E-04 (136)	9.1894E-05 (136)	8.3620E-05 (136)
17	1.6019E-04 (136)	1.2479E-04 (136)	9.2944E-05 (136)	8.2458E-05 (136)	7.8571E-05 (136)
18	1.1702E-04 (136)	1.1421E-04 (136)	1.2153E-04 (136)	1.2848E-04 (136)	1.0588E-04 (136)
19	1.1249E-04 (136)	1.4149E-04 (136)	1.1795E-04 (136)	9.2067E-05 (136)	8.3018E-05 (136)
20	9.0513E-05 (136)	1.0038E-04 (136)	8.8591E-05 (136)	7.9246E-05 (136)	7.6491E-05 (136)
21	7.6509E-05 (136)	7.6523E-05 (136)	7.5447E-05 (136)	7.5067E-05 (136)	7.5010E-05 (136)
22	7.5031E-05 (136)	7.5014E-05 (136)	7.5253E-05 (166)	7.5194E-05 (166)	7.5037E-05 (166)
23	7.5490E-05 (137)	7.5192E-05 (137)	8.2672E-05 (166)	8.7240E-05 (166)	8.0615E-05 (166)
24	8.0709E-05 (137)	7.9348E-05 (137)	1.0680E-04 (73)	1.3462E-04 (73)	1.6329E-04 (73)
25	1.1048E-04 (137)	1.1176E-04 (137)	1.9477E-04 (73)	2.0395E-04 (73)	1.8122E-04 (73)
26	1.6114E-04 (137)	1.7380E-04 (137)	1.5496E-04 (73)	1.5527E-04 (73)	1.2290E-04 (73)
27	1.6573E-04 (137)	1.5199E-04 (137)	1.1273E-04 (137)	1.1598E-04 (73)	1.1186E-04 (166)
28	1.3965E-04 (137)	1.1672E-04 (166)	9.2948E-05 (166)	8.3185E-05 (166)	7.9078E-05 (166)
29	1.6715E-04 (166)	1.4440E-04 (166)	1.0483E-04 (166)	8.8851E-05 (166)	1.1900E-04 (195)
30	2.5925E-04 (137)	1.7485E-04 (137)	1.1076E-04 (137)	8.9755E-05 (137)	8.2359E-05 (137)
31	3.2851E-04 (137)	2.2332E-04 (137)	1.4527E-04 (137)	1.0103E-04 (137)	8.7450E-05 (137)
32	2.8152E-04 (137)	1.9371E-04 (166)	1.2669E-04 (166)	9.2590E-05 (166)	1.1910E-04 (195)
33	2.1013E-04 (150)	1.8843E-04 (150)	1.3194E-04 (166)	1.2690E-04 (166)	1.0902E-04 (137)
34	2.5467E-04 (150)	2.1931E-04 (150)	1.6049E-04 (150)	1.1010E-04 (150)	9.0805E-05 (150)
35	2.3879E-04 (150)	1.8880E-04 (195)	1.3294E-04 (197)	1.2235E-04 (137)	1.1499E-04 (150)
36	4.7985E-04 (150)	3.6896E-04 (195)	2.4021E-04 (173)	1.6462E-04 (195)	1.2660E-04 (195)

MAXIMUM DAILY CONCENTRATIONS :

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	1.9452E-04	36	0.83
94	1.8580E-04	10	3.32
195	1.7422E-04	36	1.66
173	1.6493E-04	36	1.66
230	1.6262E-04	10	0.83
111	1.6103E-04	12	0.83
197	1.5997E-04	36	1.66
191	1.5970E-04	36	1.66
103	1.5911E-04	12	0.83
189	1.5719E-04	36	1.66
247	1.5584E-04	11	0.83
166	1.5485E-04	31	0.83
239	1.5062E-04	11	0.83
137	1.5053E-04	31	0.83
122	1.4819E-04	14	0.83
237	1.4662E-04	3	0.83
73	1.4650E-04	25	6.65
151	1.4052E-04	4	0.83
136	1.3846E-04	14	0.83
148	1.3713E-04	10	0.83

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PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY     PROJECT 7101

SHAWVILLE PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=    75.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
```

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1080.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1350.0	1300.0	1400.0	1880.0	2160.0
2	1200.0	1200.0	1600.0	2174.0	2100.0
3	1160.0	1460.0	1590.0	1760.0	2000.0
4	1120.0	1400.0	1540.0	1600.0	1900.0
5	1200.0	1360.0	1520.0	1600.0	1800.0
6	1250.0	1340.0	1350.0	1567.0	1560.0
7	1220.0	1320.0	1260.0	1560.0	1500.0
8	1180.0	1300.0	1540.0	1500.0	1481.0
9	1100.0	1300.0	1340.0	1627.0	1549.0
10	1070.0	1320.0	1584.0	1639.0	1564.0
11	1050.0	1320.0	1580.0	1766.0	1668.0
12	1160.0	1060.0	1340.0	1836.0	1744.0
13	1320.0	1150.0	1300.0	1720.0	1700.0
14	1400.0	1420.0	1420.0	1743.0	1800.0
15	1420.0	1520.0	1605.0	1700.0	1900.0
16	1440.0	1590.0	1580.0	1900.0	2100.0
17	1440.0	1300.0	1580.0	1900.0	2100.0
18	1440.0	1260.0	1260.0	1780.0	1840.0
19	1420.0	1200.0	1320.0	1700.0	1620.0
20	1400.0	1100.0	1400.0	1625.0	1540.0
21	1200.0	1080.0	1480.0	1540.0	1520.0
22	1060.0	1300.0	1572.0	1440.0	1620.0
23	1050.0	1460.0	1540.0	1120.0	1537.0
24	1200.0	1500.0	1540.0	1551.0	1796.0
25	1200.0	1400.0	1540.0	1505.0	1773.0
26	1260.0	1440.0	1570.0	1660.0	2120.0
27	1380.0	1460.0	1560.0	1880.0	2320.0
28	1440.0	1400.0	1540.0	1760.0	2251.0
29	1460.0	1440.0	1560.0	2140.0	2224.0
30	1460.0	1480.0	1580.0	2040.0	2253.0
31	1480.0	1500.0	1560.0	2100.0	2293.0
32	1500.0	1540.0	1460.0	2000.0	2220.0
33	1500.0	1520.0	1400.0	1841.0	2240.0
34	1480.0	1400.0	1746.0	2218.0	2056.0
35	1460.0	1200.0	1640.0	1960.0	2220.0
36	1440.0	1463.0	1380.0	1900.0	2405.0

STACK # 1--SHAWVILLE STACKS 1&2 SRC-TSP
STACK # 2--SHAWVILLE STACK 3 AND 4 SRC-TSP NORMAL LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	1.12	0.00	182.88	3.81	21.82	391.00	248.77
2	NOM	2.74	0.00	99.06	3.73	18.84	386.00	205.87

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.26 1.09 0.98 0.87 1.10 0.92 0.87 1.08 0.98 0.80 1.05 1.00

YEAR BASED ON 365. DAYS

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

MAXIMUM MEAN CONC= 7.5054E-05 DIRECTION= 10 DISTANCE= 0.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	7.50345E-05	7.50388E-05	7.50252E-05	7.50140E-05	7.50080E-05
2	7.50406E-05	7.50446E-05	7.50287E-05	7.50164E-05	7.50105E-05
3	7.50434E-05	7.50471E-05	7.50372E-05	7.50288E-05	7.50192E-05
4	7.50401E-05	7.50434E-05	7.50361E-05	7.50290E-05	7.50187E-05
5	7.50338E-05	7.50366E-05	7.50334E-05	7.50277E-05	7.50175E-05
6	7.50325E-05	7.50346E-05	7.50347E-05	7.50294E-05	7.50182E-05
7	7.50371E-05	7.50393E-05	7.50424E-05	7.50372E-05	7.50222E-05
8	7.50445E-05	7.50472E-05	7.50476E-05	7.50396E-05	7.50239E-05
9	7.50511E-05	7.50513E-05	7.50465E-05	7.50369E-05	7.50223E-05
10	7.50540E-05	7.50493E-05	7.50405E-05	7.50307E-05	7.50189E-05
11	7.50497E-05	7.50407E-05	7.50300E-05	7.50217E-05	7.50128E-05
12	7.50391E-05	7.50319E-05	7.50245E-05	7.50184E-05	7.50112E-05
13	7.50281E-05	7.50243E-05	7.50180E-05	7.50139E-05	7.50092E-05
14	7.50199E-05	7.50187E-05	7.50137E-05	7.50102E-05	7.50065E-05
15	7.50145E-05	7.50146E-05	7.50109E-05	7.50089E-05	7.50057E-05
16	7.50105E-05	7.50103E-05	7.50070E-05	7.50049E-05	7.50030E-05
17	7.50080E-05	7.50080E-05	7.50061E-05	7.50054E-05	7.50035E-05
18	7.50061E-05	7.50064E-05	7.50048E-05	7.50039E-05	7.50026E-05
19	7.50047E-05	7.50049E-05	7.50045E-05	7.50040E-05	7.50027E-05
20	7.50043E-05	7.50043E-05	7.50030E-05	7.50022E-05	7.50015E-05
21	7.50040E-05	7.50041E-05	7.50029E-05	7.50022E-05	7.50013E-05
22	7.50040E-05	7.50045E-05	7.50036E-05	7.50032E-05	7.50024E-05
23	7.50050E-05	7.50066E-05	7.50053E-05	7.50052E-05	7.50044E-05
24	7.50069E-05	7.50100E-05	7.50091E-05	7.50100E-05	7.50084E-05
25	7.50085E-05	7.50126E-05	7.50139E-05	7.50164E-05	7.50134E-05
26	7.50090E-05	7.50126E-05	7.50115E-05	7.50116E-05	7.50099E-05
27	7.50094E-05	7.50116E-05	7.50100E-05	7.50110E-05	7.50094E-05
28	7.50120E-05	7.50138E-05	7.50126E-05	7.50125E-05	7.50088E-05
29	7.50183E-05	7.50196E-05	7.50189E-05	7.50194E-05	7.50138E-05
30	7.50243E-05	7.50237E-05	7.50194E-05	7.50166E-05	7.50106E-05
31	7.50244E-05	7.50226E-05	7.50173E-05	7.50127E-05	7.50080E-05
32	7.50199E-05	7.50185E-05	7.50128E-05	7.50090E-05	7.50060E-05
33	7.50149E-05	7.50145E-05	7.50104E-05	7.50073E-05	7.50046E-05
34	7.50125E-05	7.50128E-05	7.50093E-05	7.50071E-05	7.50054E-05
35	7.50126E-05	7.50127E-05	7.50089E-05	7.50059E-05	7.50041E-05
36	7.50454E-05	7.50480E-05	7.50278E-05	7.50136E-05	7.50072E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 7.6330E-05 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	7.5480E-05 (150)	7.5473E-05 (173)	7.5290E-05 (173)	7.5194E-05 (165)	7.5169E-05 (283)
2	7.5605E-05 (140)	7.5469E-05 (140)	7.5275E-05 (265)	7.5171E-05 (265)	7.5162E-05 (7)
3	7.5765E-05 (237)	7.5535E-05 (237)	7.5402E-05 (306)	7.5586E-05 (306)	7.5398E-05 (306)
4	7.5697E-05 (151)	7.5493E-05 (151)	7.5467E-05 (56)	7.5457E-05 (56)	7.5301E-05 (23)
5	7.5690E-05 (131)	7.5425E-05 (131)	7.5397E-05 (11)	7.5332E-05 (330)	7.5253E-05 (242)
6	7.5544E-05 (221)	7.5433E-05 (221)	7.5538E-05 (19)	7.5507E-05 (19)	7.5256E-05 (19)
7	7.5630E-05 (221)	7.5460E-05 (221)	7.5612E-05 (14)	7.5628E-05 (14)	7.5409E-05 (4)
8	7.5543E-05 (256)	7.5459E-05 (90)	7.5687E-05 (44)	7.5618E-05 (44)	7.5367E-05 (45)
9	7.5616E-05 (230)	7.5478E-05 (256)	7.5582E-05 (30)	7.5666E-05 (30)	7.5428E-05 (30)
10	7.5923E-05 (230)	7.5579E-05 (230)	7.5960E-05 (94)	7.5685E-05 (94)	7.5489E-05 (318)
11	7.5835E-05 (230)	7.5514E-05 (230)	7.5569E-05 (79)	7.5584E-05 (79)	7.5312E-05 (79)
12	7.5749E-05 (239)	7.5437E-05 (67)	7.5550E-05 (67)	7.5428E-05 (67)	7.5209E-05 (96)
13	7.5605E-05 (122)	7.5403E-05 (136)	7.5336E-05 (2)	7.5294E-05 (2)	7.5233E-05 (303)
14	7.5771E-05 (122)	7.5443E-05 (136)	7.5310E-05 (122)	7.5239E-05 (302)	7.5200E-05 (302)
15	7.5583E-05 (122)	7.5403E-05 (220)	7.5410E-05 (86)	7.5377E-05 (86)	7.5221E-05 (86)
16	7.5521E-05 (219)	7.5394E-05 (219)	7.5197E-05 (219)	7.5211E-05 (34)	7.5148E-05 (34)
17	7.5612E-05 (219)	7.5445E-05 (219)	7.5206E-05 (219)	7.5158E-05 (33)	7.5142E-05 (31)
18	7.5559E-05 (127)	7.5496E-05 (127)	7.5246E-05 (127)	7.5317E-05 (20)	7.5190E-05 (20)
19	7.5652E-05 (127)	7.5471E-05 (127)	7.5249E-05 (20)	7.5286E-05 (20)	7.5224E-05 (218)
20	7.5659E-05 (127)	7.5410E-05 (127)	7.5242E-05 (218)	7.5203E-05 (218)	7.5125E-05 (218)
21	7.5502E-05 (127)	7.5345E-05 (180)	7.5214E-05 (218)	7.5121E-05 (180)	7.5076E-05 (180)
22	7.5514E-05 (180)	7.5367E-05 (180)	7.5271E-05 (218)	7.5269E-05 (218)	7.5153E-05 (218)
23	7.5395E-05 (180)	7.5325E-05 (291)	7.5290E-05 (291)	7.5344E-05 (291)	7.5308E-05 (291)
24	7.5429E-05 (176)	7.5486E-05 (176)	7.5397E-05 (291)	7.5332E-05 (33)	7.5289E-05 (33)
25	7.5350E-05 (176)	7.5412E-05 (176)	7.5586E-05 (73)	7.5709E-05 (73)	7.5422E-05 (73)
26	7.5391E-05 (145)	7.5426E-05 (145)	7.5230E-05 (145)	7.5302E-05 (28)	7.5348E-05 (28)
27	7.5306E-05 (145)	7.5402E-05 (178)	7.5268E-05 (178)	7.5303E-05 (121)	7.5338E-05 (121)
28	7.5381E-05 (120)	7.5323E-05 (178)	7.5220E-05 (244)	7.5406E-05 (121)	7.5329E-05 (121)
29	7.5433E-05 (120)	7.5432E-05 (120)	7.5431E-05 (243)	7.5505E-05 (243)	7.5359E-05 (244)
30	7.5652E-05 (120)	7.5467E-05 (120)	7.5315E-05 (120)	7.5361E-05 (8)	7.5224E-05 (162)
31	7.5815E-05 (137)	7.5511E-05 (137)	7.5509E-05 (123)	7.5570E-05 (123)	7.5327E-05 (123)
32	7.5629E-05 (137)	7.5360E-05 (137)	7.5207E-05 (272)	7.5246E-05 (6)	7.5175E-05 (6)
33	7.5448E-05 (258)	7.5331E-05 (250)	7.5181E-05 (258)	7.5158E-05 (71)	7.5144E-05 (71)
34	7.5488E-05 (258)	7.5303E-05 (258)	7.5155E-05 (211)	7.5177E-05 (53)	7.5190E-05 (53)
35	7.5400E-05 (168)	7.5298E-05 (187)	7.5225E-05 (11)	7.5187E-05 (11)	7.5104E-05 (146)
36	7.6330E-05 (150)	7.5919E-05 (195)	7.5406E-05 (195)	7.5257E-05 (195)	7.5164E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 7.9504E-05 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	7.7404E-05 (146)	7.6703E-05 (146)	7.6202E-05 (228)	7.5982E-05 (165)	7.5963E-05 (283)
2	7.7556E-05 (238)	7.6988E-05 (140)	7.6485E-05 (259)	7.6138E-05 (17)	7.6109E-05 (7)
3	7.7521E-05 (237)	7.6958E-05 (237)	7.6574E-05 (24)	7.7042E-05 (306)	7.6329E-05 (306)
4	7.7543E-05 (131)	7.7252E-05 (23)	7.6435E-05 (15)	7.6571E-05 (15)	7.6614E-05 (23)
5	7.7053E-05 (131)	7.6701E-05 (124)	7.6727E-05 (18)	7.6867E-05 (242)	7.6581E-05 (242)
6	7.7381E-05 (236)	7.6622E-05 (221)	7.6731E-05 (18)	7.6651E-05 (1)	7.6051E-05 (37)
7	7.7147E-05 (221)	7.6724E-05 (14)	7.6654E-05 (16)	7.6604E-05 (14)	7.6393E-05 (308)
8	7.7309E-05 (245)	7.6837E-05 (30)	7.6702E-05 (9)	7.6868E-05 (4)	7.6299E-05 (45)
9	7.7428E-05 (224)	7.6825E-05 (30)	7.6743E-05 (9)	7.6760E-05 (42)	7.6289E-05 (30)
10	7.7653E-05 (230)	7.6740E-05 (42)	7.6671E-05 (2)	7.6785E-05 (326)	7.6304E-05 (326)
11	7.7637E-05 (239)	7.6802E-05 (326)	7.6412E-05 (337)	7.6351E-05 (79)	7.6133E-05 (22)
12	7.7559E-05 (239)	7.6532E-05 (229)	7.6262E-05 (67)	7.6369E-05 (252)	7.6027E-05 (318)
13	7.7174E-05 (136)	7.6667E-05 (2)	7.6454E-05 (2)	7.6562E-05 (2)	7.5863E-05 (13)
14	7.7416E-05 (136)	7.6763E-05 (220)	7.6178E-05 (340)	7.6316E-05 (340)	7.5843E-05 (13)
15	7.7314E-05 (122)	7.6719E-05 (34)	7.6388E-05 (34)	7.6641E-05 (19)	7.6135E-05 (19)
16	7.7143E-05 (219)	7.6533E-05 (220)	7.6310E-05 (126)	7.6473E-05 (126)	7.5776E-05 (126)
17	7.7379E-05 (219)	7.6697E-05 (219)	7.6037E-05 (185)	7.6097E-05 (20)	7.5707E-05 (19)
18	7.7323E-05 (219)	7.6747E-05 (127)	7.5986E-05 (214)	7.6651E-05 (20)	7.6030E-05 (20)
19	7.6985E-05 (127)	7.6404E-05 (127)	7.5962E-05 (20)	7.6088E-05 (20)	7.6028E-05 (218)
20	7.7503E-05 (127)	7.6612E-05 (127)	7.6324E-05 (20)	7.6055E-05 (218)	7.5708E-05 (218)
21	7.7071E-05 (127)	7.6391E-05 (218)	7.5972E-05 (218)	7.5871E-05 (72)	7.5620E-05 (87)
22	7.7114E-05 (180)	7.6467E-05 (180)	7.6134E-05 (218)	7.6048E-05 (218)	7.5863E-05 (291)
23	7.6690E-05 (176)	7.6315E-05 (291)	7.6086E-05 (291)	7.6077E-05 (291)	7.6240E-05 (291)
24	7.6951E-05 (176)	7.6724E-05 (32)	7.6515E-05 (291)	7.6295E-05 (242)	7.6216E-05 (28)
25	7.6878E-05 (235)	7.7012E-05 (235)	7.6264E-05 (73)	7.6449E-05 (32)	7.6259E-05 (43)
26	7.7383E-05 (145)	7.6599E-05 (145)	7.6255E-05 (69)	7.6506E-05 (48)	7.6615E-05 (28)
27	7.7148E-05 (145)	7.6709E-05 (181)	7.6003E-05 (35)	7.6526E-05 (227)	7.6727E-05 (227)
28	7.6753E-05 (161)	7.6219E-05 (178)	7.6228E-05 (334)	7.6458E-05 (10)	7.6134E-05 (121)
29	7.6973E-05 (21)	7.6566E-05 (244)	7.6420E-05 (76)	7.6757E-05 (243)	7.6302E-05 (243)
30	7.7714E-05 (21)	7.6882E-05 (21)	7.6224E-05 (333)	7.6742E-05 (8)	7.6059E-05 (87)
31	7.7706E-05 (137)	7.6725E-05 (333)	7.6583E-05 (10)	7.7337E-05 (10)	7.6530E-05 (10)
32	7.7204E-05 (137)	7.6659E-05 (334)	7.6070E-05 (6)	7.6103E-05 (6)	7.5932E-05 (6)
33	7.7297E-05 (250)	7.6615E-05 (250)	7.6015E-05 (149)	7.5899E-05 (149)	7.5814E-05 (71)
34	7.7377E-05 (135)	7.6694E-05 (150)	7.6069E-05 (11)	7.6334E-05 (53)	7.6181E-05 (53)
35	7.7151E-05 (135)	7.6370E-05 (59)	7.6233E-05 (11)	7.6039E-05 (11)	7.5626E-05 (259)
36	7.9504E-05 (150)	7.7942E-05 (150)	7.6547E-05 (142)	7.6042E-05 (232)	7.5567E-05 (232)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	7.6330E-05	36	0.83
94	7.5960E-05	10	1.32
230	7.5923E-05	10	0.83
195	7.5919E-05	36	1.66
173	7.5911E-05	36	1.66
137	7.5815E-05	31	0.83
197	7.5800E-05	36	1.66
191	7.5798E-05	36	1.66
239	7.5788E-05	11	0.83
122	7.5771E-05	14	0.83
237	7.5765E-05	3	0.83
247	7.5761E-05	11	0.83
189	7.5751E-05	36	1.66
111	7.5714E-05	12	0.83
73	7.5709E-05	25	6.65
103	7.5707E-05	12	0.83
166	7.5699E-05	31	0.83
151	7.5697E-05	4	0.83
136	7.5697E-05	14	0.83
148	7.5697E-05	10	0.83

PENN. ELECTRIC CO. SHAWVILLE
SOLVENT REFINED COAL STUDY PROJECT 7101

SRC MAX. COND. TSP

STACK # 1--SHAWVILLE STACK 1 (MAX. COND.) SRC
STACK # 2--SHAWVILLE STACK 1&4 SRC-TSP MAXIMUM LOAD

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NON	1.40	0.00	182.88	3.81	29.38	403.00	334.96
2	NON	3.30	0.00	99.06	3.73	22.52	396.00	246.08

RANGE(KM)= 0.83 1.66 3.32 6.65 13.29
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 3 JDAY= 73
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 7.2 7.2 9.8 8.9 8.9 8.5 8.5 8.1 8.9 8.9 9.8 10.3 8.1 7.6 6.3 5.8 5.8 5.8 4.5 4.5 4.0 3.1 3.1 2.2
TEMP= 271. 271. 270. 270. 270. 269. 268. 268. 268. 268. 269. 269. 270. 270. 270. 270. 270. 269. 269. 270. 270. 270. 270. 269.
AFV= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
AFVR= 243. 253. 256. 251. 257. 278. 264. 255. 254. 263. 264. 259. 261. 257. 257. 257. 253. 250. 257. 250. 243. 262. 246. 223.
HLHI= 801. 801. 801. 801. 801. 801. 770. 739. 708. 677. 646. 615.
       584. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553. 553.

JYR=75 IHO= 4 JDAY= 94
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 14.8 13.4 16.1 15.6 12.5 12.5 11.6 12.1 14.8 16.1 15.6 17.4 16.1 15.6 15.6 15.2 15.2 14.8 12.5 10.3 9.4 9.8 10.7 9.8
TEMP= 268. 267. 267. 267. 266. 266. 266. 266. 267. 267. 267. 268. 269. 269. 268. 268. 268. 267. 267. 266. 266. 266. 266. 266.
AFV= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
AFVR= 101. 106. 108. 109. 109. 97. 93. 100. 106. 106. 104. 103. 104. 105. 105. 104. 110. 104. 106. 106. 101. 108. 108. 101.
HLHI= 600. 600. 600. 600. 600. 600. 600. 720. 840. 960. 1060. 1170.
      1280. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.

JYR=75 IHO= 4 JDAY=103
ISTAB= 4 4 4 4 4 4 4 3 2 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.4 5.4 5.8 6.3 5.8 5.4 4.5 4.0 5.4 6.7 6.3 6.3 7.2 7.2 7.2 6.7 5.8 5.4 5.4 5.8 5.8 5.4 4.5 3.6
TEMP= 270. 269. 269. 269. 267. 267. 267. 270. 273. 274. 275. 275. 275. 275. 276. 277. 278. 279. 276. 274. 273. 272. 271. 270.
AFV= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
AFVR= 122. 110. 113. 111. 114. 108. 109. 106. 112. 128. 129. 137. 130. 121. 122. 115. 120. 128. 136. 143. 146. 156. 153. 166.
HLHI= 822. 822. 822. 822. 822. 822. 1039. 1257. 1474. 1692. 1909. 2127.
      2344. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561. 2561.

JYR=75 IHO= 4 JDAY=111
ISTAB= 3 3 3 3 3 4 3 3 1 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4
AWS= 5.8 5.8 8.5 6.7 6.3 4.5 4.9 7.2 8.1 8.1 8.1 7.2 7.6 7.2 7.2 8.1 7.2 6.7 6.3 6.3 5.4 6.3 2.7 3.1
TEMP= 275. 275. 275. 274. 274. 272. 273. 274. 275. 275. 276. 277. 279. 280. 281. 281. 282. 281. 280. 277. 276. 275. 274. 274.
AFV=   84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
AFVR= 84. 80. 98. 116. 125. 113. 100. 101. 117. 126. 128. 129. 124. 110. 112. 120. 111. 118. 128. 128. 152. 159. 168. 153.
HLHI= 2000. 2000. 2000. 2000. 2000. 2000. 2002. 2005. 2008. 2010. 2013. 2016.
      2018. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021. 2021.

```
JYR=75 IHO= 5 JDAY=122
ISTAR=  3    3    4    4    4    4    4    3    2    2    1    1    1    1    1    1    1    1    3    3    4    4    4    4
AWS=  1.9  1.3  0.4  1.3  3.1  4.5  4.9  6.3  6.7  6.7  7.2  7.2  7.2  6.3  6.3  6.7  8.1  7.6  1.8  6.7  3.1  2.7  2.2  2.2
TEMP= 280. 280. 280. 280. 280. 281. 282. 284. 285. 285. 287. 288. 289. 290. 291. 291. 291. 289. 287. 283. 283. 281. 281.
AFV=  252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
AFVR= 252. 121.   6.  53.  63. 123. 125. 146. 150. 135. 154. 153. 142. 139. 140. 152. 139. 144. 144. 148. 148. 149. 147.  73.
HLHI=  598.  598.  598.  598.  598.  598.  598.  721.  848.  973. 1098. 1223. 1347.
      1472. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597. 1597.


JYR=75 IHO= 5 JDAY=136
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4
AWS=  1.8  2.2  3.1  4.0  2.7  2.2  3.6  4.0  4.0  4.9  4.5  5.4  4.9  4.9  4.9  4.9  4.5  4.9  5.4  5.8  4.9  4.5  4.5  4.9
TEMP= 286. 286. 285. 285. 285. 285. 286. 288. 289. 291. 293. 294. 294. 295. 295. 295. 295. 292. 290. 288. 286. 285. 284.
AFV=   32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
AFVR=  32.  85.  95.  86.  91. 109. 132. 130. 146. 136. 135. 146. 150. 141. 135. 145. 150. 166. 193. 188. 205. 219. 220. 236.
HLHI= 1188. 1188. 1188. 1188. 1188. 1188. 1166. 1145. 1123. 1102. 1080. 1059.
      1037. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016. 1016.


JYR=75 IHO= 5 JDAY=137
ISTAR=  4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    1    1    2    3    3    3    4    4    4
AWS=  3.6  4.0  2.7  3.1  4.5  5.4  6.7  5.8  5.4  4.5  5.4  5.8  5.4  5.8  4.3  5.4  5.4  5.8  4.5  6.7  7.2  4.0  3.1  3.6
TEMP= 281. 282. 281. 280. 279. 279. 281. 285. 288. 291. 294. 295. 297. 296. 296. 295. 295. 294. 292. 291. 289. 288. 287. 287.
AFV=  245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   8. 351. 335. 329.
AFVR= 245. 248. 257. 248. 257. 249. 247. 249. 260. 276. 317. 314. 311. 319. 317. 320. 319. 317. 338. 358.   8. 351. 335. 329.
HLHI=  312.  312.  312.  312.  312.  312.  439.  566.  693.  820.  947. 1074.
      1200. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IHO= 5 JDAY=149
ISTAR=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    4    4    4    4    4
AWS=  3.1  1.3  2.2  2.7  2.7  2.7  3.1  3.1  1.8  3.1  4.0  5.4  4.5  4.5  4.0  4.0  4.0  3.6  4.0  5.8  6.7  4.5  2.2  2.2
TEMP= 284. 283. 282. 281. 280. 280. 282. 286. 289. 291. 292. 293. 295. 296. 297. 298. 298. 298. 296. 293. 290. 289. 287. 285.
AFV=  137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
AFVR= 137.  70.  65.  70.  58. 103. 120. 143.  69.  53. 112.  99. 100.  91. 111. 105. 101. 115. 142. 154. 166. 176. 201. 225.
HLHI=  473.  473.  473.  473.  473.  473.  633.  792.  952. 1111. 1271. 1431.
      1590. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750. 1750.


JYR=75 IHO= 5 JDAY=150
ISTAR=  4    3    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    2    3    3    4    4    4
AWS=  5.8  7.6  6.7  6.7  7.2  6.3  7.6  6.3  3.1  4.0  4.9  4.0  4.0  4.5  4.9  4.5  5.4  3.1  4.0  3.1  3.1  4.9  4.5  3.6
TEMP= 283. 283. 281. 281. 281. 283. 283. 283. 283. 293. 294. 294. 295. 297. 300. 299. 299. 299. 297. 296. 294. 294. 293. 293. 292.
AFV=   30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
AFVR=  30.  16.  13.  16.  13.   9.   4. 352.   9.  10.   6.  13.   4.   6.   9. 351. 344. 332. 348. 353.   9.  14.  33.  29.
HLHI=  982.  982.  982.  982.  982.  982. 1018. 1055. 1092. 1128. 1165. 1201.
      1238. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275. 1275.


JYR=75 IHO= 5 JDAY=151
ISTAR=  4    4    4    4    4    4    4    3    2    2    1    1    1    1    1    3    2    3    4    4    3    4    4    4
AWS=  3.6  2.2  3.1  4.0  4.0  5.4  5.8  5.8  7.2  6.7  8.1  8.1  8.5  8.9  9.4  5.8  4.9  3.6  4.0  3.6  5.4  4.5  4.5  5.4
TEMP= 291. 291. 291. 290. 290. 290. 290. 291. 295. 295. 297. 297. 298. 299. 299. 297. 297. 297. 296. 295. 294. 292. 292. 291.
AFV=   23.  22.  29.  29.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
AFVR=  23.  22.  29.  29.  25.  24.  28.  41.  43.  54.  48.  45.  42.  41.  47.  42.  31.  38.  28. 352. 336. 350. 351.  10.
HLHI=  863.  863.  863.  863.  863.  863.  911.  960. 1008. 1057. 1105. 1153.
      1202. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.
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JYR=75 IHR= 6 JDAY=166
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    2    3    4    4    3    4
AWS=  1.8  1.8  1.8  0.9  0.9  2.7  3.1  1.8  1.3  3.6  4.5  6.7  8.5  8.5  9.4  8.9  9.4  7.2  7.2  7.2  7.6  7.2  8.5  6.3
TEMP= 288. 287. 287. 287. 286. 286. 288. 290. 294. 297. 300. 301. 301. 302. 301. 301. 301. 300. 299. 298. 296. 296. 294. 290.
AFV=  352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
AFVR= 352. 319. 298. 317. 211. 270. 268. 272. 243. 293. 326. 311. 313. 317. 315. 320. 313. 319. 325. 331. 354. 349.  50.  44.
HLHI=  356.  356.  356.  356.  356.  356.  515.  673.  832.  990. 1149. 1408.
      1466. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625. 1625.


JYR=75 IHR= 6 JDAY=173
ISTAR=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  0.4  2.2  2.2  2.2  1.3  0.0  0.0  0.0  0.9  1.3  2.2  2.7  2.2  3.1  2.7  2.2  1.3  3.1  3.6  2.2  3.1  3.6  3.1  3.1  2.7
TEMP= 288. 287. 287. 286. 286. 286. 288. 292. 295. 297. 299. 301. 302. 302. 302. 304. 303. 300. 299. 296. 295. 294. 294. 292.
AFV=  211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
AFVR= 211. 319.   5.  12.   8. 180. 180.  59.  39.  10.   7.   5.   9.   9.  11. 126.  10. 341. 336.  12.  14.  19.  23.  31.
HLHI=  340.  340.  340.  340.  340.  340.  458.  577.  695.  814.  932. 1051.
      1169. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288. 1288.


JYR=75 IHR= 7 JDAY=189
ISTAR=  4    4    4    4    1    4    4    3    1    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  1.3  1.3  1.3  1.9  1.8  1.8  0.4  2.7  1.8  1.3  1.3  2.7  2.7  2.7  3.6  2.7  3.6  4.5  4.5  3.1  1.3  2.7  2.2  3.1
TEMP= 289. 289. 288. 288. 288. 288. 288. 290. 291. 294. 298. 300. 302. 303. 301. 300. 301. 299. 297. 296. 295. 294. 294. 293.
AFV=  342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
AFVR= 342. 300. 284. 256. 259. 288. 310.  21.  32.  77.  31.  12.   4.   2. 312. 340.   1.   2.  12.  18.  32.  33.  36.  29.
HLHI=  609.  609.  609.  609.  609.  609.  750.  890. 1031. 1171. 1312. 1453.
      1593. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734. 1734.


JYR=75 IHR= 7 JDAY=191
ISTAR=  4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    2    2    3    3    4    4    4
AWS=  1.3  1.8  0.9  1.3  0.9  1.3  2.2  0.4  0.4  1.3  2.2  2.2  2.7  4.0  2.7  4.0  3.1  4.5  5.4  1.8  1.8  1.8  1.3  2.7
TEMP= 289. 287. 286. 285. 285. 284. 287. 290. 293. 296. 297. 297. 298. 299. 301. 301. 283. 283. 283. 283. 283. 283. 287. 287.
AFV=   19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
AFVR=  19.  67. 118.  90.  88.  32.  71. 108.  14. 334.   1.   9.  10.  15.  11.   9.   9.  35.  36. 319.  23.  30. 274.  36.
HLHI=  542.  542.  542.  542.  542.  542.  716.  890. 1065. 1239. 1413. 1588.
      1762. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936. 1936.


JYR=75 IHR= 7 JDAY=195
ISTAR=  3    3    4    4    4    4    4    3    1    1    1    1    1    1    1    3    1    1    3    4    4    4    4    4    4
AWS=  2.2  2.2  2.7  2.7  1.8  1.3  1.3  1.3  1.3  2.7  3.6  3.6  3.6  3.1  3.6  4.0  3.6  3.6  3.1  2.7  1.8  0.4  0.9  2.2
TEMP= 291. 290. 290. 290. 290. 290. 290. 291. 292. 293. 296. 297. 299. 299. 295. 297. 297. 294. 292. 292. 292. 291. 291. 291.
AFV=  323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
AFVR= 323. 298. 284. 303. 324. 331. 337. 291.   5.   5.  11.   4.   5.   1.  16. 353. 350.   5.  22. 347. 302. 337.  44.  52.
HLHI=  660.  660.  660.  660.  660.  660.  743.  827.  910.  994. 1077. 1160.
      1244. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327. 1327.


JYR=75 IHR= 7 JDAY=197
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.1  4.0  2.2  0.4  0.0  0.0  0.4  0.4  1.3  2.7  2.7  3.6  2.7  2.7  2.2  2.2  3.1  3.1  3.1  3.1  0.9  2.2  1.8  0.9
TEMP= 291. 291. 291. 291. 291. 291. 291. 292. 294. 296. 299. 299. 298. 301. 301. 301. 300. 299. 297. 295. 295. 294. 293. 297.
AFV=  259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
AFVR= 259. 279. 286. 300. 305. 282. 279. 313.  18.   7.   3.  18.  56.  10.  12.  28.  12.   2. 356.  25. 112. 284. 268. 189.
HLHI=  640.  640.  640.  640.  640.  640.  832. 1024. 1216. 1408. 1600. 1793.
      1985. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177. 2177.
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JYR=75 IHO= 8 JDAY=230
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  4.0  3.6  4.9  4.9  4.5  5.4  4.5  3.6  4.0  5.4  5.8  5.4  5.8  6.3  7.2  6.3  6.3  5.8  6.3  6.7  7.6  6.7  3.1  3.6
TEMP= 290. 290. 289. 289. 289. 290. 291. 292. 293. 294. 295. 296. 296. 297. 297. 297. 298. 297. 295. 292. 291. 290. 289. 288.
AFV=   40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
AFVR=  40.  49.  47.  61.  77. 106. 107. 110. 108.  94. 107. 101. 106. 111. 114. 118. 106. 109. 116. 129. 145. 148. 130. 145.
HLHI=  967.  967.  967.  967.  967.  967. 1073. 1179. 1284. 1390. 1496. 1601.
      1707. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813. 1813.


JYR=75 IHO= 8 JDAY=237
ISTAB=  4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    2    2    3    4    4    4    4    4
AWS=  7.5  5.8  4.5  4.0  4.9  4.9  4.5  4.0  4.5  4.0  4.0  5.8  5.4  6.7  8.1  8.5  8.5  7.6  7.2  6.3  4.9  4.5  4.9  4.0
TEMP= 295. 294. 294. 293. 293. 292. 293. 294. 296. 297. 299. 300. 301. 302. 301. 302. 301. 301. 299. 298. 296. 295. 294. 293.
AFV=   47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
AFVR=  47.  51.  49.  27.  30.  27.  31.  37.  34.  33.  32.  39.  25.  26.  37.  45.  47.  48.  40.  45.  47.  39.  39.  21.
HLHI=  501.  501.  501.  501.  501.  501.  538.  574.  611.  648.  684.  721.
      758.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.  795.


JYR=75 IHO= 8 JDAY=239
ISTAB=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  6.1  5.4  4.5  3.6  2.7  3.6  4.0  3.1  2.2  3.6  4.9  6.7  8.1  7.6  6.3  7.2  6.3  5.4  6.7  7.2  6.3  4.9  4.9  3.6
TEMP= 290. 290. 289. 288. 288. 287. 287. 288. 290. 294. 296. 297. 298. 298. 299. 299. 299. 299. 296. 293. 291. 289. 287. 286.
AFV=  114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
AFVR= 114. 115. 109. 104.  85.  48.  53.  47.  57. 106. 122. 124. 125. 124. 118. 113. 112. 117. 109. 121. 125. 129. 142. 151.
HLHI=  439.  439.  439.  439.  439.  439.  544.  649.  754.  859.  965. 1070.
      1175. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280. 1280.


JYR=75 IHO= 9 JDAY=247
ISTAB=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    2    4    4    4    4    4    4
AWS=  0.4  0.4  1.3  2.7  3.1  4.5  4.0  4.0  5.4  6.7  6.7  6.7  6.7  7.2  8.1  7.2  7.2  8.5  6.3  5.4  4.0  4.9  6.3  4.5
TEMP= 286. 286. 286. 286. 286. 287. 287. 288. 290. 291. 293. 294. 295. 296. 295. 295. 295. 294. 291. 290. 288. 288. 286. 285.
AFV=   47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
AFVR=  47.  45.  25.  36.  37.  31.  32.  77. 115. 111. 108. 113. 118. 122. 117. 112. 110. 110. 116. 114. 116. 121. 132. 131.
HLHI=   35.   35.   35.   35.   35.   35.  172.  308.  445.  581.  718.  855.
      991. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128. 1128.

YEAR BASED ON  20. DAYS
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PENN. ELECTRIC CO. SHAWVILLE

NON--SO2

MAXIMUM MEAN CONC= 7.52848E-05 DIRECTION= 36 DISTANCE= 1.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.0 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	7.51208E-05	7.51384E-05	7.50818E-05	7.50445E-05	7.50252E-05
2	7.50927E-05	7.50906E-05	7.50486E-05	7.50261E-05	7.50167E-05
3	7.50821E-05	7.50709E-05	7.50418E-05	7.50249E-05	7.50146E-05
4	7.50745E-05	7.50590E-05	7.50354E-05	7.50194E-05	7.50096E-05
5	7.50427E-05	7.50328E-05	7.50201E-05	7.50107E-05	7.50070E-05
6	7.50154E-05	7.50110E-05	7.50065E-05	7.50031E-05	7.50030E-05
7	7.50107E-05	7.50065E-05	7.50044E-05	7.50024E-05	7.50012E-05
8	7.50325E-05	7.50179E-05	7.50104E-05	7.50088E-05	7.50051E-05
9	7.50896E-05	7.50542E-05	7.50284E-05	7.50140E-05	7.50065E-05
10	7.51773E-05	7.51303E-05	7.51072E-05	7.50695E-05	7.50344E-05
11	7.52401E-05	7.51479E-05	7.50695E-05	7.50359E-05	7.50195E-05
12	7.52252E-05	7.51294E-05	7.50592E-05	7.50302E-05	7.50148E-05
13	7.51673E-05	7.50970E-05	7.50403E-05	7.50149E-05	7.50064E-05
14	7.51124E-05	7.50660E-05	7.50349E-05	7.50237E-05	7.50131E-05
15	7.50727E-05	7.50428E-05	7.50194E-05	7.50101E-05	7.50052E-05
16	7.50379E-05	7.50210E-05	7.50076E-05	7.50028E-05	7.50013E-05
17	7.50137E-05	7.50070E-05	7.50023E-05	7.50008E-05	7.50004E-05
18	7.50042E-05	7.50032E-05	7.50032E-05	7.50036E-05	7.50021E-05
19	7.50026E-05	7.50044E-05	7.50029E-05	7.50012E-05	7.50005E-05
20	7.50010E-05	7.50017E-05	7.50009E-05	7.50003E-05	7.50001E-05
21	7.50001E-05	7.50001E-05	7.50000E-05	7.50000E-05	7.50000E-05
22	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
23	7.50000E-05	7.50000E-05	7.50005E-05	7.50008E-05	7.50004E-05
24	7.50004E-05	7.50005E-05	7.50060E-05	7.50131E-05	7.50118E-05
25	7.50024E-05	7.50053E-05	7.50283E-05	7.50395E-05	7.50258E-05
26	7.50059E-05	7.50081E-05	7.50142E-05	7.50145E-05	7.50102E-05
27	7.50076E-05	7.50065E-05	7.50054E-05	7.50044E-05	7.50044E-05
28	7.50109E-05	7.50068E-05	7.50027E-05	7.50012E-05	7.50006E-05
29	7.50262E-05	7.50142E-05	7.50050E-05	7.50027E-05	7.50051E-05
30	7.50605E-05	7.50338E-05	7.50123E-05	7.50043E-05	7.50020E-05
31	7.50893E-05	7.50542E-05	7.50216E-05	7.50080E-05	7.50039E-05
32	7.50798E-05	7.50513E-05	7.50218E-05	7.50093E-05	7.50069E-05
33	7.50517E-05	7.50384E-05	7.50237E-05	7.50170E-05	7.50097E-05
34	7.50409E-05	7.50373E-05	7.50197E-05	7.50080E-05	7.50036E-05
35	7.50529E-05	7.50510E-05	7.50275E-05	7.50147E-05	7.50082E-05
36	7.52602E-05	7.52835E-05	7.51499E-05	7.50686E-05	7.50361E-05

PENN. ELECTRIC CO. SHANVILLE

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 7.6268E-05 DIRECTION=360. DISTANCE= 0.8 KM DAY=150.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	7.5451E-05 (150)	7.5517E-05 (197)	7.5346E-05 (173)	7.5215E-05 (173)	7.5131E-05 (173)
2	7.5579E-05 (237)	7.5361E-05 (237)	7.5190E-05 (197)	7.5115E-05 (197)	7.5081E-05 (197)
3	7.5761E-05 (237)	7.5541E-05 (237)	7.5296E-05 (237)	7.5202E-05 (237)	7.5131E-05 (237)
4	7.5696E-05 (151)	7.5489E-05 (151)	7.5287E-05 (237)	7.5169E-05 (237)	7.5087E-05 (237)
5	7.5507E-05 (151)	7.5329E-05 (151)	7.5138E-05 (151)	7.5059E-05 (166)	7.5049E-05 (239)
6	7.5183E-05 (151)	7.5096E-05 (151)	7.5037E-05 (189)	7.5026E-05 (189)	7.5038E-05 (148)
7	7.5078E-05 (148)	7.5043E-05 (148)	7.5054E-05 (189)	7.5040E-05 (189)	7.5021E-05 (189)
8	7.5458E-05 (230)	7.5157E-05 (148)	7.5062E-05 (111)	7.5118E-05 (111)	7.5076E-05 (111)
9	7.5625E-05 (230)	7.5357E-05 (230)	7.5135E-05 (230)	7.5093E-05 (94)	7.5045E-05 (94)
10	7.5933E-05 (230)	7.5589E-05 (230)	7.6162E-05 (94)	7.5904E-05 (94)	7.5423E-05 (94)
11	7.5902E-05 (111)	7.5528E-05 (247)	7.5298E-05 (247)	7.5231E-05 (247)	7.5146E-05 (247)
12	7.5917E-05 (111)	7.5517E-05 (111)	7.5273E-05 (111)	7.5183E-05 (111)	7.5096E-05 (111)
13	7.5738E-05 (103)	7.5440E-05 (103)	7.5184E-05 (103)	7.5077E-05 (136)	7.5038E-05 (136)
14	7.5780E-05 (122)	7.5446E-05 (136)	7.5281E-05 (122)	7.5217E-05 (122)	7.5116E-05 (122)
15	7.5690E-05 (122)	7.5394E-05 (122)	7.5168E-05 (122)	7.5072E-05 (148)	7.5041E-05 (148)
16	7.5370E-05 (122)	7.5220E-05 (136)	7.5082E-05 (136)	7.5035E-05 (136)	7.5017E-05 (136)
17	7.5159E-05 (136)	7.5091E-05 (136)	7.5032E-05 (136)	7.5013E-05 (136)	7.5006E-05 (136)
18	7.5063E-05 (136)	7.5057E-05 (136)	7.5063E-05 (136)	7.5072E-05 (136)	7.5042E-05 (136)
19	7.5049E-05 (136)	7.5088E-05 (136)	7.5058E-05 (136)	7.5023E-05 (136)	7.5011E-05 (136)
20	7.5020E-05 (136)	7.5034E-05 (136)	7.5018E-05 (136)	7.5006E-05 (136)	7.5002E-05 (136)
21	7.5002E-05 (136)	7.5002E-05 (136)	7.5001E-05 (136)	7.5000E-05 (136)	7.5000E-05 (136)
22	7.5000E-05 (136)	7.5000E-05 (136)	7.5000E-05 (166)	7.5000E-05 (166)	7.5000E-05 (166)
23	7.5001E-05 (137)	7.5000E-05 (137)	7.5010E-05 (166)	7.5016E-05 (166)	7.5007E-05 (166)
24	7.5008E-05 (137)	7.5006E-05 (137)	7.5052E-05 (73)	7.5137E-05 (73)	7.5154E-05 (73)
25	7.5047E-05 (137)	7.5056E-05 (73)	7.5530E-05 (73)	7.5764E-05 (73)	7.5504E-05 (73)
26	7.5113E-05 (137)	7.5132E-05 (137)	7.5203E-05 (73)	7.5250E-05 (73)	7.5182E-05 (73)
27	7.5123E-05 (137)	7.5105E-05 (137)	7.5052E-05 (137)	7.5055E-05 (73)	7.5047E-05 (166)
28	7.5114E-05 (137)	7.5066E-05 (137)	7.5027E-05 (166)	7.5012E-05 (137)	7.5006E-05 (166)
29	7.5276E-05 (166)	7.5153E-05 (166)	7.5057E-05 (166)	7.5023E-05 (166)	7.5086E-05 (195)
30	7.5591E-05 (166)	7.5320E-05 (137)	7.5118E-05 (137)	7.5043E-05 (137)	7.5020E-05 (137)
31	7.5853E-05 (166)	7.5518E-05 (137)	7.5215E-05 (137)	7.5084E-05 (137)	7.5041E-05 (137)
32	7.5755E-05 (166)	7.5422E-05 (166)	7.5161E-05 (166)	7.5056E-05 (166)	7.5060E-05 (195)
33	7.5366E-05 (166)	7.5196E-05 (166)	7.5121E-05 (166)	7.5085E-05 (166)	7.5052E-05 (137)
34	7.5280E-05 (150)	7.5255E-05 (150)	7.5139E-05 (150)	7.5056E-05 (150)	7.5026E-05 (150)
35	7.5337E-05 (150)	7.5238E-05 (150)	7.5105E-05 (197)	7.5077E-05 (150)	7.5066E-05 (150)
36	7.6268E-05 (150)	7.6066E-05 (195)	7.5608E-05 (195)	7.5323E-05 (195)	7.5166E-05 (150)

PENN. ELECTRIC CO. SHAWVILLE

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 7.9297E-05 DIRECTION= 0. DISTANCE= 0.8 KM DAY=150. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.8 KM	1.7 KM	3.3 KM	6.7 KM	13.3 KM
1	7.6940E-05 (150)	7.6838E-05 (191)	7.6014E-05 (173)	7.5699E-05 (173)	7.5521E-05 (173)
2	7.7490E-05 (237)	7.6399E-05 (197)	7.5845E-05 (197)	7.5366E-05 (197)	7.5439E-05 (189)
3	7.7454E-05 (237)	7.6885E-05 (237)	7.6253E-05 (237)	7.5977E-05 (237)	7.5722E-05 (237)
4	7.7573E-05 (151)	7.6805E-05 (237)	7.6162E-05 (237)	7.5803E-05 (237)	7.5426E-05 (237)
5	7.6870E-05 (151)	7.6276E-05 (151)	7.5616E-05 (151)	7.5475E-05 (173)	7.5394E-05 (239)
6	7.5723E-05 (151)	7.5470E-05 (151)	7.5299E-05 (189)	7.5205E-05 (189)	7.5302E-05 (148)
7	7.5522E-05 (148)	7.5281E-05 (148)	7.5435E-05 (189)	7.5319E-05 (189)	7.5171E-05 (189)
8	7.6469E-05 (148)	7.5902E-05 (148)	7.5481E-05 (111)	7.5940E-05 (111)	7.5609E-05 (111)
9	7.7302E-05 (148)	7.6501E-05 (148)	7.5900E-05 (94)	7.5740E-05 (94)	7.5360E-05 (94)
10	7.7693E-05 (230)	7.6641E-05 (148)	7.6351E-05 (94)	7.6233E-05 (94)	7.5620E-05 (94)
11	7.7721E-05 (239)	7.6554E-05 (247)	7.5839E-05 (247)	7.5830E-05 (247)	7.5614E-05 (247)
12	7.7645E-05 (239)	7.6417E-05 (239)	7.5802E-05 (111)	7.5665E-05 (111)	7.5355E-05 (111)
13	7.7307E-05 (103)	7.6569E-05 (136)	7.5845E-05 (136)	7.5357E-05 (136)	7.5172E-05 (136)
14	7.7405E-05 (122)	7.6485E-05 (136)	7.5849E-05 (122)	7.5893E-05 (122)	7.5479E-05 (122)
15	7.7373E-05 (122)	7.6343E-05 (136)	7.5551E-05 (122)	7.5578E-05 (148)	7.5331E-05 (148)
16	7.6701E-05 (136)	7.6082E-05 (136)	7.5420E-05 (136)	7.5187E-05 (136)	7.5095E-05 (136)
17	7.5905E-05 (136)	7.5540E-05 (136)	7.5197E-05 (136)	7.5082E-05 (136)	7.5039E-05 (136)
18	7.5442E-05 (136)	7.5419E-05 (136)	7.5492E-05 (136)	7.5573E-05 (136)	7.5337E-05 (136)
19	7.5389E-05 (136)	7.5705E-05 (136)	7.5467E-05 (136)	7.5188E-05 (136)	7.5089E-05 (136)
20	7.5161E-05 (136)	7.5269E-05 (136)	7.5148E-05 (136)	7.5047E-05 (136)	7.5016E-05 (136)
21	7.5016E-05 (136)	7.5016E-05 (136)	7.5005E-05 (136)	7.5001E-05 (136)	7.5000E-05 (136)
22	7.5000E-05 (136)	7.5000E-05 (136)	7.5003E-05 (166)	7.5002E-05 (166)	7.5000E-05 (166)
23	7.5005E-05 (137)	7.5002E-05 (137)	7.5079E-05 (166)	7.5125E-05 (166)	7.5058E-05 (166)
24	7.5060E-05 (137)	7.5046E-05 (137)	7.5330E-05 (73)	7.5634E-05 (73)	7.5968E-05 (73)
25	7.5373E-05 (137)	7.5193E-05 (137)	7.6249E-05 (73)	7.6375E-05 (73)	7.6162E-05 (73)
26	7.5906E-05 (137)	7.6056E-05 (137)	7.5934E-05 (73)	7.5861E-05 (73)	7.5526E-05 (73)
27	7.5959E-05 (137)	7.5829E-05 (137)	7.5414E-05 (137)	7.5439E-05 (73)	7.5378E-05 (166)
28	7.5686E-05 (137)	7.5451E-05 (166)	7.5197E-05 (166)	7.5090E-05 (166)	7.5045E-05 (166)
29	7.5977E-05 (166)	7.5751E-05 (166)	7.5328E-05 (166)	7.5153E-05 (166)	7.5481E-05 (195)
30	7.6954E-05 (137)	7.6086E-05 (137)	7.5393E-05 (137)	7.5163E-05 (137)	7.5081E-05 (137)
31	7.7703E-05 (137)	7.6596E-05 (137)	7.5768E-05 (137)	7.5287E-05 (137)	7.5137E-05 (137)
32	7.7201E-05 (137)	7.6279E-05 (166)	7.5565E-05 (166)	7.5194E-05 (166)	7.5482E-05 (195)
33	7.6432E-05 (150)	7.6220E-05 (150)	7.5606E-05 (150)	7.5557E-05 (166)	7.5370E-05 (137)
34	7.6907E-05 (150)	7.6546E-05 (150)	7.5932E-05 (150)	7.5386E-05 (150)	7.5175E-05 (150)
35	7.6741E-05 (150)	7.6231E-05 (195)	7.5626E-05 (197)	7.5507E-05 (137)	7.5433E-05 (150)
36	7.9297E-05 (150)	7.8174E-05 (195)	7.6813E-05 (173)	7.5948E-05 (195)	7.5544E-05 (195)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
150	7.6268E-05	36	0.83
94	7.6162E-05	10	3.32
195	7.6066E-05	36	1.66
173	7.5965E-05	36	1.66
230	7.5933E-05	10	0.83
111	7.5917E-05	12	0.83
197	7.5913E-05	36	1.66
191	7.5911E-05	36	1.66
103	7.5896E-05	12	0.83
189	7.5885E-05	36	1.66
247	7.5860E-05	11	0.83
166	7.5853E-05	31	0.83
239	7.5806E-05	11	0.83
137	7.5803E-05	31	0.83
122	7.5780E-05	14	0.83
73	7.5764E-05	25	6.65
237	7.5761E-05	3	0.83
151	7.5696E-05	4	0.83
136	7.5674E-05	14	0.83
148	7.5659E-05	10	0.83

PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

SEWARD PLANT 1975

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&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 2 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 7   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     75.0

DAY--  1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
       1 1 1 1 1 1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1120.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1085.0	1330.0	1200.0	1350.0	1600.0
2	1090.0	1150.0	1370.0	1500.0	1500.0
3	1100.0	1200.0	1250.0	1400.0	1500.0
4	1115.0	1120.0	1400.0	1440.0	1450.0
5	1120.0	1100.0	1250.0	1420.0	1550.0
6	1130.0	1240.0	1140.0	1440.0	1500.0
7	1130.0	1300.0	1100.0	1300.0	1720.0
8	1135.0	1280.0	1400.0	1150.0	1720.0
9	1150.0	1240.0	1350.0	1400.0	1950.0
10	1145.0	1240.0	1450.0	1800.0	2100.0
11	1135.0	1250.0	1500.0	1950.0	1800.0
12	1120.0	1210.0	1550.0	2100.0	2460.0
13	1120.0	1260.0	1500.0	2100.0	2560.0
14	1120.0	1220.0	1500.0	2000.0	2500.0
15	1120.0	1220.0	1400.0	1850.0	2530.0
16	1100.0	1280.0	1350.0	1700.0	2450.0
17	1100.0	1210.0	1450.0	1640.0	2200.0
18	1100.0	1140.0	1350.0	1620.0	1900.0
19	1070.0	1100.0	1200.0	1600.0	1400.0
20	1080.0	1080.0	1100.0	1540.0	1300.0
21	1240.0	1080.0	1080.0	1300.0	1210.0
22	1210.0	1090.0	1080.0	1080.0	1210.0
23	1270.0	1230.0	1150.0	1080.0	1400.0
24	1420.0	1250.0	1200.0	1200.0	1060.0
25	1485.0	1350.0	1240.0	1300.0	1400.0
26	1500.0	1470.0	1300.0	1400.0	1350.0
27	1420.0	1560.0	1470.0	1460.0	1570.0
28	1310.0	1540.0	1540.0	1400.0	1660.0
29	1440.0	1400.0	1400.0	1550.0	1660.0
30	1550.0	1320.0	1400.0	1600.0	1710.0
31	1550.0	1300.0	1540.0	1620.0	1770.0
32	1560.0	1330.0	1400.0	1700.0	1750.0
33	1530.0	1550.0	1550.0	1800.0	1700.0
34	1400.0	1400.0	1680.0	1550.0	1600.0
35	1250.0	1330.0	1300.0	1580.0	1620.0
36	1180.0	1200.0	1350.0	1350.0	1620.0

STACK # 1--SEWARD STACK 1 COAL TSP
STACK # 2--SEWARD STACK 2 COAL NORMAL TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	14.00	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	18.00	0.00	68.60	1.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.21
SEASONAL VARIATIONS BY CASE #
1 1.03 0.93 0.99 1.10 1.03 0.99 1.13 1.09 1.10 0.92 0.87 0.81

YEAR BASED ON 365. DAYS

PENN. ELEC. SEWARD

NOM--802

MAXIMUM MEAN CONC= 7.6076E-05 DIRECTION= 8 DISTANCE= 3.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR \ RANGE	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.51256E-05	7.51496E-05	7.51613E-05	7.51647E-05	7.51534E-05
2	7.51488E-05	7.51667E-05	7.51739E-05	7.51763E-05	7.51675E-05
3	7.52391E-05	7.52980E-05	7.53195E-05	7.53224E-05	7.52954E-05
4	7.53710E-05	7.54903E-05	7.55407E-05	7.55531E-05	7.55053E-05
5	7.55254E-05	7.57646E-05	7.58608E-05	7.58760E-05	7.57754E-05
6	7.55309E-05	7.56365E-05	7.56917E-05	7.57070E-05	7.56460E-05
7	7.55120E-05	7.57432E-05	7.58748E-05	7.59394E-05	7.58895E-05
8	7.54889E-05	7.58054E-05	7.59857E-05	7.60761E-05	7.60272E-05
9	7.54306E-05	7.55930E-05	7.57367E-05	7.58389E-05	7.58379E-05
10	7.55462E-05	7.56886E-05	7.57940E-05	7.58481E-05	7.58007E-05
11	7.56459E-05	7.57564E-05	7.58313E-05	7.58481E-05	7.57681E-05
12	7.55459E-05	7.55548E-05	7.55723E-05	7.55701E-05	7.55226E-05
13	7.53241E-05	7.53139E-05	7.53239E-05	7.53272E-05	7.53097E-05
14	7.51719E-05	7.51755E-05	7.51802E-05	7.51838E-05	7.51762E-05
15	7.51101E-05	7.51180E-05	7.51172E-05	7.51214E-05	7.51259E-05
16	7.50884E-05	7.50963E-05	7.50930E-05	7.50931E-05	7.50938E-05
17	7.50743E-05	7.50765E-05	7.50747E-05	7.50769E-05	7.50788E-05
18	7.50603E-05	7.50694E-05	7.50673E-05	7.50650E-05	7.50606E-05
19	7.50511E-05	7.50681E-05	7.50671E-05	7.50609E-05	7.50489E-05
20	7.50434E-05	7.50643E-05	7.50681E-05	7.50672E-05	7.50621E-05
21	7.50359E-05	7.50625E-05	7.50703E-05	7.50716E-05	7.50657E-05
22	7.50272E-05	7.50553E-05	7.50660E-05	7.50733E-05	7.50763E-05
23	7.50267E-05	7.50588E-05	7.50664E-05	7.50658E-05	7.50576E-05
24	7.50355E-05	7.50675E-05	7.50748E-05	7.50763E-05	7.50735E-05
25	7.50523E-05	7.50936E-05	7.51005E-05	7.50982E-05	7.50891E-05
26	7.50623E-05	7.50855E-05	7.50842E-05	7.50790E-05	7.50710E-05
27	7.50951E-05	7.51086E-05	7.51019E-05	7.50927E-05	7.50816E-05
28	7.51522E-05	7.51364E-05	7.51233E-05	7.51184E-05	7.51205E-05
29	7.52246E-05	7.52093E-05	7.52142E-05	7.52273E-05	7.52345E-05
30	7.53009E-05	7.53144E-05	7.53119E-05	7.52955E-05	7.52561E-05
31	7.53540E-05	7.54893E-05	7.55162E-05	7.54982E-05	7.54294E-05
32	7.52959E-05	7.55033E-05	7.55667E-05	7.55693E-05	7.55040E-05
33	7.51603E-05	7.52422E-05	7.52626E-05	7.52583E-05	7.52280E-05
34	7.50952E-05	7.51320E-05	7.51484E-05	7.51575E-05	7.51533E-05
35	7.50952E-05	7.50985E-05	7.51004E-05	7.51008E-05	7.50938E-05
36	7.51801E-05	7.51955E-05	7.51913E-05	7.51760E-05	7.51448E-05

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 9.2487E-05 DIRECTION=300. DISTANCE= 2.8 KM DAY=120.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	8.0163E-05 (200)	7.9959E-05 (199)	8.1309E-05 (254)	8.3069E-05 (254)	8.3486E-05 (254)
2	7.9764E-05 (113)	7.8328E-05 (164)	7.8648E-05 (164)	7.8393E-05 (164)	7.8090E-05 (167)
3	8.1930E-05 (208)	8.0856E-05 (349)	8.1180E-05 (349)	8.0984E-05 (263)	8.0626E-05 (263)
4	8.4497E-05 (208)	8.4211E-05 (156)	8.5781E-05 (156)	8.5733E-05 (306)	8.4922E-05 (306)
5	8.3406E-05 (208)	8.8829E-05 (56)	9.0418E-05 (56)	8.9378E-05 (56)	8.6073E-05 (56)
6	8.3139E-05 (189)	8.3495E-05 (39)	8.4415E-05 (332)	8.5395E-05 (332)	8.4583E-05 (332)
7	8.3224E-05 (189)	8.5771E-05 (26)	8.6588E-05 (26)	8.6559E-05 (308)	8.5817E-05 (308)
8	8.4001E-05 (58)	9.0811E-05 (57)	9.0960E-05 (57)	8.8850E-05 (57)	8.7257E-05 (7)
9	8.4796E-05 (183)	8.2853E-05 (9)	8.4124E-05 (9)	8.3615E-05 (9)	8.3549E-05 (124)
10	8.6844E-05 (111)	8.6298E-05 (62)	8.9144E-05 (62)	8.9330E-05 (62)	8.6754E-05 (62)
11	8.7381E-05 (96)	8.6872E-05 (94)	8.8256E-05 (94)	8.8526E-05 (96)	8.6885E-05 (96)
12	8.7687E-05 (103)	8.4516E-05 (79)	8.5012E-05 (275)	8.5364E-05 (275)	8.3765E-05 (275)
13	8.4391E-05 (103)	8.3455E-05 (67)	8.4812E-05 (67)	8.4285E-05 (67)	8.2168E-05 (67)
14	8.2307E-05 (117)	8.0420E-05 (185)	8.0066E-05 (303)	8.0147E-05 (303)	7.9399E-05 (303)
15	8.1240E-05 (219)	7.9578E-05 (219)	7.8816E-05 (220)	7.8914E-05 (86)	7.9605E-05 (86)
16	8.1178E-05 (219)	8.0211E-05 (186)	7.9191E-05 (186)	7.9055E-05 (20)	8.0350E-05 (19)
17	8.1399E-05 (180)	8.0698E-05 (186)	7.9557E-05 (186)	7.8234E-05 (186)	7.8505E-05 (218)
18	8.2377E-05 (180)	8.0963E-05 (180)	7.9510E-05 (180)	7.8183E-05 (180)	7.7768E-05 (210)
19	8.1089E-05 (180)	7.9917E-05 (180)	7.8634E-05 (180)	7.8776E-05 (218)	7.9025E-05 (218)
20	7.8911E-05 (180)	7.9065E-05 (181)	7.8271E-05 (179)	7.7874E-05 (179)	7.7567E-05 (160)
21	7.8748E-05 (218)	8.0113E-05 (181)	7.9990E-05 (218)	7.9905E-05 (218)	7.9130E-05 (218)
22	7.7852E-05 (181)	7.9681E-05 (181)	7.9307E-05 (181)	7.9742E-05 (189)	8.0175E-05 (159)
23	7.6866E-05 (181)	7.8886E-05 (181)	7.8887E-05 (267)	7.9066E-05 (267)	7.8407E-05 (267)
24	7.7171E-05 (179)	7.9080E-05 (267)	8.0030E-05 (267)	7.9936E-05 (267)	7.8936E-05 (267)
25	7.8108E-05 (179)	8.4179E-05 (267)	8.6565E-05 (267)	8.6380E-05 (267)	8.4189E-05 (267)
26	7.8151E-05 (179)	7.9063E-05 (179)	7.8835E-05 (267)	7.8731E-05 (267)	7.7997E-05 (267)
27	7.9829E-05 (187)	8.0410E-05 (73)	8.1102E-05 (73)	8.0659E-05 (73)	7.9100E-05 (73)
28	8.5098E-05 (187)	8.0787E-05 (187)	7.9832E-05 (73)	7.9049E-05 (73)	7.8449E-05 (119)
29	8.8361E-05 (187)	8.4055E-05 (187)	8.6115E-05 (177)	9.0227E-05 (177)	9.1344E-05 (177)
30	8.9366E-05 (120)	9.1833E-05 (120)	9.2487E-05 (120)	9.0946E-05 (120)	8.7177E-05 (120)
31	8.5979E-05 (194)	9.0907E-05 (261)	9.2432E-05 (261)	9.0886E-05 (261)	8.6941E-05 (261)
32	8.5256E-05 (77)	8.8739E-05 (77)	8.8116E-05 (77)	8.8467E-05 (137)	8.6342E-05 (137)
33	8.0683E-05 (112)	8.1490E-05 (6)	8.2653E-05 (6)	8.2307E-05 (6)	8.0683E-05 (6)
34	8.0165E-05 (112)	7.8855E-05 (112)	7.8428E-05 (325)	7.8454E-05 (311)	7.8159E-05 (311)
35	8.2222E-05 (200)	7.9650E-05 (200)	7.8757E-05 (200)	7.9097E-05 (201)	7.8844E-05 (201)
36	8.6183E-05 (200)	8.6463E-05 (200)	8.6847E-05 (200)	8.6027E-05 (200)	8.3649E-05 (200)

PENN. ELEC. SENARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.2434E-04 DIRECTION= 60. DISTANCE= 2.8 KM DAY= 19. HOUR= 300.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	1.0221E-04 (195)	9.6759E-05 (204)	9.7807E-05 (254)	1.0557E-04 (254)	1.0622E-04 (254)
2	1.0300E-04 (238)	9.3540E-05 (113)	9.2757E-05 (113)	9.4408E-05 (83)	9.5223E-05 (205)
3	1.1160E-04 (238)	1.0074E-04 (191)	1.0452E-04 (312)	1.0786E-04 (312)	1.0681E-04 (241)
4	1.0911E-04 (205)	1.0392E-04 (156)	1.0756E-04 (156)	1.0605E-04 (156)	1.0685E-04 (114)
5	1.1905E-04 (237)	1.0642E-04 (3)	1.1867E-04 (3)	1.2268E-04 (3)	1.1702E-04 (3)
6	1.1636E-04 (110)	1.1941E-04 (39)	1.2434E-04 (39)	1.2045E-04 (39)	1.1077E-04 (39)
7	1.1357E-04 (154)	1.0476E-04 (26)	1.0961E-04 (234)	1.1300E-04 (309)	1.1414E-04 (42)
8	1.0921E-04 (58)	1.0762E-04 (93)	1.0642E-04 (19)	1.0746E-04 (234)	1.0554E-04 (234)
9	1.0923E-04 (183)	1.0329E-04 (9)	1.0677E-04 (9)	1.0855E-04 (245)	1.0949E-04 (42)
10	1.1002E-04 (91)	1.0750E-04 (93)	1.0719E-04 (94)	1.0754E-04 (256)	1.0530E-04 (229)
11	1.1455E-04 (97)	1.0701E-04 (93)	1.1232E-04 (81)	1.1537E-04 (81)	1.1101E-04 (81)
12	1.0913E-04 (95)	1.0367E-04 (79)	1.0716E-04 (126)	1.0516E-04 (126)	1.0257E-04 (98)
13	1.0966E-04 (303)	1.0029E-04 (67)	1.0406E-04 (67)	1.0252E-04 (284)	1.0419E-04 (206)
14	1.0077E-04 (117)	1.0141E-04 (185)	9.7659E-05 (185)	1.0049E-04 (302)	9.9184E-05 (302)
15	1.0697E-04 (219)	9.9340E-05 (210)	9.8251E-05 (210)	9.3992E-05 (210)	9.6191E-05 (20)
16	1.0353E-04 (220)	9.6715E-05 (186)	9.3372E-05 (186)	9.6483E-05 (20)	9.9710E-05 (20)
17	1.0391E-04 (180)	9.8107E-05 (186)	9.2841E-05 (186)	9.4038E-05 (218)	9.4868E-05 (218)
18	1.0058E-04 (180)	9.5425E-05 (186)	9.3397E-05 (210)	9.2030E-05 (210)	8.9048E-05 (92)
19	1.0070E-04 (180)	9.4331E-05 (180)	8.9590E-05 (182)	9.3251E-05 (218)	9.4699E-05 (218)
20	9.9231E-05 (218)	9.5230E-05 (181)	9.0624E-05 (181)	8.8468E-05 (179)	9.1129E-05 (219)
21	1.0440E-04 (218)	1.0129E-04 (218)	9.7386E-05 (218)	9.3036E-05 (218)	9.1208E-05 (73)
22	9.0344E-05 (218)	8.8704E-05 (181)	9.0139E-05 (128)	8.9538E-05 (128)	9.3104E-05 (217)
23	8.4680E-05 (196)	9.2027E-05 (181)	9.4403E-05 (267)	9.6612E-05 (267)	9.4483E-05 (218)
24	8.7755E-05 (130)	9.2012E-05 (267)	9.6851E-05 (267)	9.7011E-05 (267)	9.4127E-05 (266)
25	9.1455E-05 (130)	1.0175E-04 (267)	1.0844E-04 (267)	1.0808E-04 (267)	1.0277E-04 (267)
26	9.4495E-05 (130)	9.4800E-05 (179)	9.4932E-05 (365)	9.3448E-05 (267)	8.9866E-05 (267)
27	1.0198E-04 (187)	1.0180E-04 (73)	1.0431E-04 (73)	1.0250E-04 (73)	9.8274E-05 (87)
28	1.1288E-04 (187)	1.0418E-04 (73)	1.0353E-04 (73)	9.9039E-05 (73)	9.3809E-05 (119)
29	1.0940E-04 (187)	9.7465E-05 (187)	9.8608E-05 (177)	1.0379E-04 (177)	1.0507E-04 (177)
30	1.0997E-04 (120)	1.0526E-04 (120)	1.0955E-04 (120)	1.0804E-04 (120)	1.0303E-04 (137)
31	1.1168E-04 (258)	1.1018E-04 (243)	1.1972E-04 (243)	1.2163E-04 (243)	1.1543E-04 (243)
32	1.1396E-04 (258)	1.0820E-04 (244)	1.1035E-04 (261)	1.0829E-04 (261)	1.0335E-04 (258)
33	1.0249E-04 (112)	1.0280E-04 (6)	1.0602E-04 (6)	1.0348E-04 (6)	9.6439E-05 (6)
34	9.6744E-05 (112)	9.8997E-05 (325)	1.0275E-04 (325)	1.0263E-04 (311)	1.0028E-04 (311)
35	1.0409E-04 (200)	9.6344E-05 (200)	9.5149E-05 (200)	9.2562E-05 (201)	9.2188E-05 (201)
36	1.2128E-04 (201)	1.0400E-04 (201)	1.1102E-04 (200)	1.1070E-04 (200)	1.0373E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
120	9.2487E-05	30	2.75
261	9.2432E-05	31	2.75
177	9.1344E-05	29	5.23
57	9.0960E-05	9	2.75
56	9.0418E-05	5	2.75
62	8.9330E-05	10	3.65
77	8.8739E-05	32	2.07
96	8.8526E-05	11	3.65
137	8.8467E-05	32	3.65
335	8.8403E-05	8	2.75
187	8.8361E-05	29	1.17
94	8.8256E-05	11	2.75
14	8.8038E-05	9	3.65
7	8.7905E-05	8	3.65
37	8.7851E-05	8	3.65
26	8.7796E-05	8	2.75
103	8.7687E-05	12	1.17
188	8.7236E-05	29	1.17
111	8.6878E-05	11	1.17
200	8.6847E-05	36	2.75

PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

1975 DATA MAXIMUM LOAD SEWARD

STACK # 1--SEWARD STACK 1 - MAXIMUM LOAD COAL TSP
STACK # 2--SEWARD STACK 2 - MAXIMUM LOAD COAL TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1.	NON	21.40	0.00	68.60	2.40	31.30	449.00	141.60
2	NON	41.50	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IMO= 1 JDAY= 7

ISTAR=	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	
AWS=	7.6	7.6	9.4	8.5	9.4	8.5	8.5	8.1	9.4	8.9	8.9	9.4	7.2	4.0	4.0	4.5	3.6	5.4	6.3	8.1	8.1	6.3	6.3	6.3
TEMP=	273.	273.	273.	273.	273.	273.	273.	273.	273.	274.	274.	275.	276.	277.	277.	277.	277.	276.	276.	277.	277.	277.	277.	277.
AFV=	59.	71.	80.	83.	82.	84.	85.	83.	77.	82.	83.	89.	86.	82.	82.	71.	38.	5.	2.	18.	23.	26.	6.	357.
AFVR=	59.	71.	80.	83.	82.	84.	85.	83.	77.	82.	83.	89.	86.	82.	82.	71.	38.	5.	2.	18.	23.	26.	6.	357.
HLH1=	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.										
	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.	1800.												

JYR=75 IMO= 1 JDAY= 14

ISTAR=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	2	3	3	3	3	3	3	3	
AWS=	7.6	8.9	8.1	7.6	7.6	8.1	8.9	10.3	8.9	6.7	6.7	8.5	8.5	8.5	8.1	8.1	7.6	8.1	9.4	9.4	8.5	8.1	8.9	9.4
TEMP=	260.	260.	259.	259.	259.	259.	258.	258.	258.	259.	259.	259.	259.	259.	260.	260.	260.	260.	260.	260.	259.	260.	260.	260.
AFV=	101.	90.	88.	79.	84.	81.	75.	76.	71.	77.	80.	81.	87.	84.	81.	85.	81.	85.	84.	80.	75.	73.	72.	70.
AFVR=	101.	90.	88.	79.	84.	81.	75.	76.	71.	77.	80.	81.	87.	84.	81.	85.	81.	85.	84.	80.	75.	73.	72.	70.
HLH1=	959.	959.	959.	959.	959.	959.	1013.	1067.	1121.	1175.	1228.	1282.												
	1336.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.	1390.												

JYR=75 IMO= 1 JDAY= 26

ISTAR=	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3
AWS=	11.2	11.6	12.1	13.0	13.9	13.9	14.8	16.1	14.8	15.2	15.6	15.6	15.2	14.8	15.2	16.5	14.3	16.1	13.9	13.0	13.9	13.0	12.5	11.6
TEMP=	271.	271.	271.	271.	270.	270.	270.	269.	269.	269.	269.	269.	269.	269.	268.	267.	267.	267.	267.	267.	267.	266.	266.	266.
AFV=	75.	72.	71.	65.	82.	77.	76.	78.	73.	75.	80.	78.	86.	85.	88.	88.	91.	92.	88.	88.	86.	88.	87.	87.
AFVR=	75.	72.	71.	65.	82.	77.	76.	78.	73.	75.	80.	78.	86.	85.	88.	88.	91.	92.	88.	88.	86.	88.	87.	87.
HLH1=	566.	566.	566.	566.	566.	566.	566.	598.	629.	661.	693.	725.	756.											
	788.	820.	820.	820.	820.	820.	820.	820.	820.	820.	820.	820.												

JYR=75 IMO= 2 JDAY= 37

ISTAR=	3	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
AWS=	8.1	8.5	8.5	9.8	11.2	11.2	10.3	9.4	10.3	10.7	10.7	10.3	10.3	8.5	8.1	7.6	6.7	7.2	6.7	6.3	6.7	6.7	7.6	7.2
TEMP=	272.	272.	273.	274.	274.	274.	273.	273.	272.	271.	271.	271.	271.	271.	271.	271.	271.	271.	271.	271.	270.	270.	270.	270.
AFV=	68.	67.	67.	73.	76.	80.	85.	92.	88.	88.	83.	82.	86.	87.	85.	88.	92.	91.	93.	92.	86.	85.	91.	97.
AFVR=	68.	67.	67.	73.	76.	80.	85.	92.	88.	88.	83.	82.	86.	87.	85.	88.	92.	91.	93.	92.	86.	85.	91.	97.
HLH1=	1100.	1100.	1100.	1100.	1100.	1100.	1044.	1088.	1081.	1075.	1069.	1063.												
	1056.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.	1050.												

```
JYR=75 IMO= 2 JDAY= 56
ISTAB=  3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3
AWS= 10.7  8.5  7.2  7.2  8.9 10.7 10.7  9.8 12.5 13.4 15.2 15.2 13.0 13.4 16.5 16.1 16.5 16.5 18.3 18.3 16.1 17.9 20.1 19.2
TEMP= 271. 271. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 271. 271. 271. 271. 271. 271. 272. 271. 271. 272. 272. 273.
AFV=   93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
AFVR=  93.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
HLHI= 1700. 1700. 1700. 1700. 1700. 1700. 1609. 1518. 1426. 1335. 1244. 1153.
      1061.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.


JYR=75 IMO= 2 JDAY= 57
ISTAB=  3   3   3   3   3   3   3   3   3   3   3   2   2   3   2   3   3   3   3   3   3   3   3   3
AWS= 19.2 17.4 17.9 16.1 15.2 15.2 13.9 13.9 14.3 16.1 16.5 16.1 15.6 17.0 16.5 15.6 14.3 13.9 13.0 12.5 13.4 13.4 12.1 11.6
TEMP= 272. 271. 271. 271. 271. 271. 270. 270. 270. 271. 272. 273. 274. 274. 275. 275. 274. 274. 274. 273. 273. 273. 272. 272.
AFV=   82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
AFVR=  82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
HLHI= 2000. 2000. 2000. 2000. 2000. 2000. 1968. 1935. 1903. 1870. 1838. 1805.
      1773. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740.


JYR=75 IMO= 3 JDAY= 62
ISTAB=  3   3   3   3   3   3   3   3   3   2   1   3   3   3   3   3   3   3   3   3   3   3   3   3
AWS=  9.8  9.4  8.5  8.9  8.9  9.8 10.3  9.4  9.4  9.8 10.3 10.7 11.6 11.6 12.1 10.3 10.3 11.2 12.1 10.7 12.5 12.1 10.3  9.8
TEMP= 263. 263. 262. 262. 263. 262. 262. 262. 262. 263. 264. 264. 265. 265. 264. 264. 265. 264. 264. 264. 264. 263. 263. 263.
AFV=  110. 110. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
AFVR= 110. 110. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
HLHI= 1050. 1050. 1050. 1050. 1050. 1050. 1174. 1298. 1421. 1545. 1669. 1793.
      1916. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040.


JYR=75 IMO= 3 JDAY= 77
ISTAB=  4   3   3   3   3   3   3   3   3   2   1   1   1   1   2   3   3   3   3   3   3   3   3   3
AWS=  9.4 10.3  8.9 11.2 13.4 12.5 15.2 14.3 12.5 13.4 15.6 13.0 12.1 13.0 13.4 11.2 14.8 14.3 17.0 18.3 13.9 13.0 13.0 13.4
TEMP= 277. 277. 276. 276. 275. 275. 275. 275. 275. 276. 277. 279. 279. 280. 280. 281. 280. 278. 277. 276. 276. 275. 275. 276.
AFV=  312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
AFVR= 312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
HLHI=  100.  100.  100.  100.  100.  100.  750.  400.  550.  700.  850. 1000.
      1150. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.


JYR=75 IMO= 4 JDAY= 94
ISTAB=  3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3   3
AWS= 15.6 18.8 17.0 17.9 17.9 17.0 15.6 14.8 15.6 11.2 13.0 10.3 11.6 11.2 13.0 12.1 12.1 11.6 11.2 11.2 10.7 10.7 11.2 11.2
TEMP= 266. 266. 265. 265. 265. 265. 264. 265. 265. 266. 266. 268. 269. 270. 270. 269. 268. 266. 266. 266. 266. 265. 265. 265.
AFV=  115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
AFVR= 115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
HLHI= 1000. 1000. 1000. 1000. 1000. 1000. 1106. 1213. 1319. 1425. 1531. 1638.
      1744. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.


JYR=75 IMO= 4 JDAY= 96
ISTAB=  3   3   3   3   3   3   3   3   2   1   1   1   1   1   1   1   2   2   3   3   3   3   3   3
AWS=  6.3  8.1  8.1  7.2  8.1  8.1  8.5  8.4  9.8  9.4  9.8  9.4  9.8 11.2 10.3 11.2 11.6 10.7  8.9  9.8  9.8  8.9  7.6  6.3
TEMP= 266. 267. 267. 266. 266. 267. 267. 267. 268. 269. 270. 271. 271. 272. 272. 272. 271. 271. 270. 269. 268. 268. 267. 268.
AFV=  120. 109. 113. 115. 111. 110. 110. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 110. 120.
AFVR= 120. 109. 113. 115. 111. 110. 110. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 110. 120.
HLHI=  336.  336.  336.  336.  336.  336.  444.  552.  660.  768.  876.  984.
      1092. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200.
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JYR=75 IHO= 4 JDAY=103
ISTAB=  4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.6  3.1  3.1  2.7  2.2  1.8  1.8  1.3  2.7  3.6  4.5  5.4  6.3  6.3  6.3  6.7  6.7  5.4  4.9  4.0  4.0  3.6  3.6  3.6
TEMP= 270. 270. 270. 270. 270. 270. 271. 271. 272. 273. 275. 276. 277. 277. 277. 277. 277. 276. 275. 274. 274. 272. 272. 272.
AFV=  190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
AFVR= 190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
HLH1= 778.  778.  778.  778.  778.  778. 1029. 1279. 1529. 1779. 2029. 2280.
      2530. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780.


JYR=75 IHO= 4 JDAY=111
ISTAB=  1    3    3    3    3    3    4    3    3    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  5.8  7.2  6.7  7.2  6.3  6.3  6.7  7.2  7.6  7.2  7.2  7.2  6.7  7.2  6.7  6.7  6.3  6.3  4.9  4.5  3.1  3.1  3.6  3.1
TEMP= 275. 274. 275. 274. 273. 272. 272. 273. 274. 274. 276. 277. 277. 279. 279. 279. 279. 279. 278. 277. 276. 275. 275. 275.
AFV=  180.  78.  89.  90.  97.  96.  87.  95. 108. 109. 111. 119. 118. 114. 101. 111. 105. 103. 115. 120. 122. 128. 147. 156.
AFVR= 180.  78.  89.  90.  97.  96.  87.  85. 108. 109. 111. 119. 118. 114. 101. 111. 105. 103. 115. 120. 122. 128. 147. 156.
HLH1= 2050. 2050. 2050. 2050. 2050. 2050. 2039. 2028. 2016. 2005. 1994. 1983.
      1971. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960.


JYR=75 IHO= 4 JDAY=120
ISTAB=  3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    2    3    3    3    3    3    3
AWS=  9.4  9.8 10.3  9.8 10.7  9.8 10.3 11.2 11.2 10.7 10.3 11.2 11.2  9.4 11.6 11.6 11.2 10.7 10.3  9.4  9.8 11.2 12.1 12.5
TEMP= 280. 280. 281. 281. 280. 280. 281. 281. 282. 284. 284. 285. 284. 285. 284. 284. 284. 283. 282. 282. 282. 282. 282. 282.
AFV=  310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
AFVR= 310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
HLH1=  600.  600.  600.  600.  600.  600.  600.  720.  840.  960. 1080. 1200.
      1320. 1440. 1560. 1560. 1560. 1560. 1560. 1560. 1560. 1560. 1560. 1560.


JYR=75 IHO= 5 JDAY=137
ISTAB=  4    4    4    4    4    4    3    3    3    3    2    2    2    3    3    3    3    3    3    3    3    3    3    3
AWS=  6.3  6.7 10.3  8.5  6.3  5.8  6.7  7.2  5.8  6.3  6.7  7.6  8.1  7.6  8.1  8.1  9.8  8.9  8.5  8.1  8.5  9.4  9.8  9.4
TEMP= 285. 285. 284. 284. 285. 284. 285. 286. 287. 289. 290. 291. 291. 291. 291. 290. 289. 289. 288. 287. 287. 286. 286. 286.
AFV=  275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
AFVR= 275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
HLH1=  100.  100.  100.  100.  100.  100.  234.  368.  501.  635.  769.  903.
      1036. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170.


JYR=75 IHO= 6 JDAY=177
ISTAB=  4    3    3    4    4    4    4    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    3    3
AWS=  5.8  4.9  4.5  4.0  4.9  5.4  5.4  6.7  5.8  5.4  4.9  5.8  6.7  5.4  5.4  5.8  5.8  4.9  5.8  6.7  7.2  7.6  7.2  4.9
TEMP= 291. 291. 291. 291. 291. 291. 290. 290. 290. 291. 290. 290. 290. 290. 291. 292. 291. 290. 289. 290. 289. 289. 289. 289.
AFV=  290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
AFVR= 290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
HLH1=  100.  100.  100.  100.  100.  100.  189.  278.  366.  455.  544.  633.
       721.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.


JYR=75 IHO= 7 JDAY=187
ISTAB=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  3.6  3.6  3.1  3.1  3.1  3.1  3.1  4.0  4.5  2.7  4.0  4.5  4.5  4.0  4.5  4.0  3.6  4.0  4.5  4.9  5.4  6.3  5.4  5.4  4.5
TEMP= 293. 292. 292. 291. 291. 291. 291. 292. 294. 295. 296. 297. 298. 298. 299. 299. 299. 297. 296. 295. 294. 294. 293. 292.
AFV=  300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 297. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
AFVR= 300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 297. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
HLH1=  389.  389.  389.  389.  389.  389.  571.  754.  937. 1119. 1302. 1485.
      1667. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.
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JYR=75 IMO= 7 JDAY=188
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  4.5  3.6  4.0  7.2  2.2  4.0  5.8  4.0  3.6  2.7  2.7  4.5  5.8  4.9  4.9  5.8  4.9  4.9  4.5  4.0  3.1  4.0  4.9  4.0
TEMP= 292. 291. 291. 290. 290. 289. 290. 291. 292. 294. 296. 296. 296. 296. 296. 295. 294. 294. 294. 293. 292. 291. 291. 289.
AFV=  310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
AFVR= 310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
HLH1=  450.  450.  450.  450.  450.  450.  556.  663.  769.  875.  981. 1088.
      1194. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.


JYR=75 IMO= 7 JDAY=200
ISTAR=  4    4    4    4    4    3    3    3    3    2    1    1    1    2    2    2    3    3    3    3    3    4    4    4
AWS=  6.7  8.9  8.9  8.9  9.8 10.3 10.3  9.4  9.4  9.4  8.1  8.9  8.1  8.9  9.4  8.9  8.9  7.6  8.9  6.7  6.7  8.1  8.9  9.8
TEMP= 292. 292. 292. 292. 292. 292. 293. 294. 294. 294. 296. 297. 297. 299. 299. 299. 299. 298. 297. 297. 297. 295. 296. 296.
AFV=  350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.
AFVR= 350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.
HLH1= 1100. 1100. 1100. 1100. 1100. 1100. 1154. 1208. 1261. 1315. 1369. 1423.
      1476. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530.


JYR=75 IMO= 9 JDAY=261
ISTAR=  3    4    4    4    3    4    4    4    3    3    3    3    3    3    3    3    3    3    3    3    3    3    4
AWS=  8.5  9.8 10.7  9.8 10.7 11.2 12.5 12.5 12.1 11.6 14.3 14.3 15.2 13.9 13.9 13.9 13.4 12.5 11.6 12.1 11.2 11.6 10.7  9.4
TEMP= 287. 286. 287. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 286. 287. 287. 287. 287. 287. 287. 287. 287. 287. 287.
AFV=  315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
AFVR= 315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
HLH1=  600.  600.  600.  600.  600.  600.  571.  543.  514.  485.  456.  428.
       399.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.


JYR=75 IMO=12 JDAY=335
ISTAR=  3    3    1    1    2    1    3    3    3    3    2    2    2    2    2    3    3    3    3    3    4    4    4    4
AWS= 14.3 14.9 12.5 12.5 15.2 14.8 12.1 12.5 13.9 13.9 15.2 13.9 11.6 13.4 10.7  9.8  9.4  7.6  7.6  7.6  8.9  6.7  5.8  4.9
TEMP= 279. 276. 274. 272. 271. 270. 269. 269. 269. 268. 268. 269. 269. 269. 270. 269. 268. 268. 283. 283. 283. 283. 283. 283.
AFV=   87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
AFVR=  87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
HLH1= 1800. 1800. 1800. 1800. 1800. 1800. 1775. 1750. 1725. 1700. 1675. 1650.
      1625. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600.

YEAR BASED ON  20. DAYS
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PENN. ELEC. SEWARD

NOX--SO2

MAXIMUM MEAN CONC= 8.03035E-05 DIRECTION= 8 DISTANCE= 2.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.7 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM*
1	7.52785E-05	7.51284E-05	7.50796E-05	7.50473E-05	7.50238E-05
2	7.50606E-05	7.50215E-05	7.50120E-05	7.50066E-05	7.50031E-05
3	7.50093E-05	7.50032E-05	7.50056E-05	7.50165E-05	7.50379E-05
4	7.50120E-05	7.50129E-05	7.50091E-05	7.50040E-05	7.50012E-05
5	7.53168E-05	7.59250E-05	7.60216E-05	7.59466E-05	7.57252E-05
6	7.52162E-05	7.54743E-05	7.55232E-05	7.54928E-05	7.53867E-05
7	7.59800E-05	7.70503E-05	7.73086E-05	7.72219E-05	7.67857E-05
8	7.70184E-05	7.95110E-05	8.03033E-05	8.02642E-05	7.93359E-05
9	7.61559E-05	7.62319E-05	7.63440E-05	7.63359E-05	7.61258E-05
10	7.67798E-05	7.70005E-05	7.70307E-05	7.68388E-05	7.64045E-05
11	7.72781E-05	7.74139E-05	7.74455E-05	7.72351E-05	7.67401E-05
12	7.66101E-05	7.63104E-05	7.62378E-05	7.61285E-05	7.59246E-05
13	7.57565E-05	7.54166E-05	7.52987E-05	7.52091E-05	7.51280E-05
14	7.52445E-05	7.51054E-05	7.50631E-05	7.50366E-05	7.50178E-05
15	7.50507E-05	7.50193E-05	7.50108E-05	7.50059E-05	7.50026E-05
16	7.50063E-05	7.50020E-05	7.50011E-05	7.50005E-05	7.50002E-05
17	7.50005E-05	7.50003E-05	7.50003E-05	7.50002E-05	7.50001E-05
18	7.50002E-05	7.50130E-05	7.50338E-05	7.50543E-05	7.50637E-05
19	7.50000E-05	7.50002E-05	7.50003E-05	7.50002E-05	7.50001E-05
20	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
21	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
22	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
23	7.50001E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
24	7.50016E-05	7.50005E-05	7.50002E-05	7.50001E-05	7.50000E-05
25	7.50186E-05	7.50069E-05	7.50036E-05	7.50019E-05	7.50008E-05
26	7.51174E-05	7.50504E-05	7.50296E-05	7.50168E-05	7.50082E-05
27	7.54359E-05	7.52075E-05	7.51286E-05	7.50730E-05	7.50402E-05
28	7.61147E-05	7.56493E-05	7.54825E-05	7.53734E-05	7.52771E-05
29	7.69889E-05	7.65922E-05	7.66266E-05	7.66714E-05	7.65457E-05
30	7.73459E-05	7.69352E-05	7.67434E-05	7.64876E-05	7.61111E-05
31	7.70376E-05	7.71240E-05	7.69867E-05	7.66892E-05	7.62420E-05
32	7.63541E-05	7.70286E-05	7.71461E-05	7.69833E-05	7.65511E-05
33	7.53432E-05	7.51588E-05	7.50968E-05	7.50561E-05	7.50282E-05
34	7.51777E-05	7.51604E-05	7.51793E-05	7.51801E-05	7.51511E-05
35	7.53986E-05	7.52539E-05	7.52042E-05	7.51546E-05	7.51075E-05
36	7.56078E-05	7.56261E-05	7.56446E-05	7.55972E-05	7.54663E-05

PENN. ELEC. SEWARD

NON--SO2

YEARLY MAXIMUM 24-HOUR CONC= 9.6019E-05 DIRECTION= 80. DISTANCE= 2.8 KM DAY= 57.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	8.0570E-05 (200)	7.7567E-05 (200)	7.6592E-05 (200)	7.5947E-05 (200)	7.5476E-05 (200)
2	7.6212E-05 (200)	7.5429E-05 (200)	7.5240E-05 (200)	7.5131E-05 (200)	7.5062E-05 (200)
3	7.5186E-05 (200)	7.5056E-05 (200)	7.5083E-05 (7)	7.5315E-05 (7)	7.5751E-05 (7)
4	7.5222E-05 (56)	7.5254E-05 (56)	7.5159E-05 (56)	7.5078E-05 (56)	7.5023E-05 (56)
5	8.1242E-05 (56)	9.3435E-05 (56)	9.5392E-05 (56)	9.3912E-05 (56)	8.9498E-05 (56)
6	7.6479E-05 (56)	8.0018E-05 (56)	8.0626E-05 (56)	8.0368E-05 (56)	7.9266E-05 (56)
7	8.1665E-05 (57)	8.7943E-05 (26)	8.8810E-05 (26)	8.7381E-05 (14)	8.6150E-05 (14)
8	8.8115E-05 (335)	9.5957E-05 (57)	9.6019E-05 (57)	9.3811E-05 (335)	8.9729E-05 (37)
9	9.1780E-05 (111)	8.0213E-05 (335)	8.2150E-05 (37)	8.4140E-05 (37)	8.4022E-05 (37)
10	8.8161E-05 (111)	8.9293E-05 (62)	9.2695E-05 (62)	9.2781E-05 (62)	8.9489E-05 (62)
11	8.8773E-05 (96)	8.8395E-05 (94)	8.9827E-05 (96)	9.0139E-05 (96)	8.8198E-05 (96)
12	8.9149E-05 (103)	8.2977E-05 (103)	8.2508E-05 (94)	8.2229E-05 (94)	8.0864E-05 (96)
13	8.5460E-05 (103)	8.0384E-05 (103)	7.8477E-05 (103)	7.7161E-05 (103)	7.6144E-05 (94)
14	7.9160E-05 (103)	7.6870E-05 (103)	7.6135E-05 (103)	7.5666E-05 (103)	7.5328E-05 (103)
15	7.5949E-05 (103)	7.5371E-05 (103)	7.5210E-05 (103)	7.5115E-05 (103)	7.5052E-05 (103)
16	7.5174E-05 (103)	7.5040E-05 (103)	7.5021E-05 (103)	7.5010E-05 (103)	7.5004E-05 (103)
17	7.5009E-05 (103)	7.5004E-05 (111)	7.5005E-05 (111)	7.5004E-05 (111)	7.5002E-05 (111)
18	7.5003E-05 (111)	7.5261E-05 (111)	7.5676E-05 (111)	7.6086E-05 (111)	7.6274E-05 (111)
19	7.5000E-05 (111)	7.5004E-05 (111)	7.5005E-05 (111)	7.5004E-05 (111)	7.5002E-05 (111)
20	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)
21	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)
22	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)
23	7.5001E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)
24	7.5024E-05 (187)	7.5007E-05 (187)	7.5003E-05 (187)	7.5001E-05 (187)	7.5001E-05 (187)
25	7.5265E-05 (187)	7.5100E-05 (187)	7.5054E-05 (187)	7.5028E-05 (187)	7.5012E-05 (187)
26	7.6578E-05 (187)	7.5707E-05 (187)	7.5421E-05 (187)	7.5242E-05 (187)	7.5118E-05 (187)
27	8.0235E-05 (187)	7.7611E-05 (187)	7.6640E-05 (187)	7.5994E-05 (187)	7.5522E-05 (187)
28	8.5971E-05 (187)	8.1232E-05 (187)	7.9120E-05 (187)	7.7596E-05 (187)	7.7044E-05 (177)
29	8.9549E-05 (187)	8.4793E-05 (187)	8.2137E-05 (177)	9.4106E-05 (177)	9.5268E-05 (177)
30	9.1061E-05 (120)	9.3911E-05 (120)	9.4538E-05 (120)	9.2725E-05 (120)	8.8476E-05 (120)
31	8.3905E-05 (120)	9.2884E-05 (261)	9.4446E-05 (261)	9.2632E-05 (261)	8.8200E-05 (261)
32	8.7918E-05 (77)	9.2058E-05 (77)	9.1201E-05 (77)	9.1057E-05 (137)	8.8435E-05 (137)
33	7.9076E-05 (77)	7.6765E-05 (77)	7.6060E-05 (77)	7.5619E-05 (77)	7.5326E-05 (77)
34	7.7330E-05 (200)	7.7788E-05 (200)	7.8355E-05 (200)	7.8474E-05 (200)	7.7957E-05 (200)
35	8.2810E-05 (200)	8.0033E-05 (200)	7.9061E-05 (200)	7.8160E-05 (200)	7.7144E-05 (200)
36	8.7143E-05 (200)	8.7519E-05 (200)	8.7890E-05 (200)	8.6944E-05 (200)	8.4325E-05 (200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.1943E-04 DIRECTION= 0. DISTANCE= 1.2 KM DAY=200. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	9.7163E-05 (200)	8.5232E-05 (200)	8.1332E-05 (200)	7.8785E-05 (200)	7.6914E-05 (200)
2	8.3004E-05 (200)	7.7895E-05 (200)	7.6656E-05 (200)	7.5932E-05 (200)	7.5453E-05 (200)
3	7.6466E-05 (200)	7.5441E-05 (200)	7.5647E-05 (7)	7.7520E-05 (7)	8.1011E-05 (7)
4	7.5475E-05 (56)	7.5509E-05 (56)	7.5289E-05 (56)	7.5143E-05 (56)	7.5044E-05 (56)
5	9.2440E-05 (56)	1.1175E-04 (56)	1.1189E-04 (56)	1.0977E-04 (56)	1.0263E-04 (56)
6	8.1440E-05 (56)	8.7623E-05 (56)	8.7535E-05 (26)	8.6789E-05 (56)	8.5411E-05 (56)
7	9.8445E-05 (57)	1.1110E-04 (57)	1.1175E-04 (57)	1.0979E-04 (26)	1.0453E-04 (14)
8	1.0965E-04 (335)	1.1190E-04 (57)	1.1263E-04 (335)	1.1044E-04 (7)	1.0695E-04 (335)
9	1.0163E-04 (335)	9.8618E-05 (26)	1.0349E-04 (56)	1.0794E-04 (56)	1.0613E-04 (37)
10	1.0891E-04 (111)	1.0994E-04 (94)	1.1085E-04 (94)	1.0897E-04 (62)	1.0416E-04 (62)
11	1.1256E-04 (96)	1.1078E-04 (94)	1.1021E-04 (94)	1.0962E-04 (94)	1.0731E-04 (96)
12	1.1142E-04 (103)	9.6182E-05 (103)	9.9204E-05 (94)	9.9321E-05 (96)	9.5253E-05 (96)
13	1.0346E-04 (103)	8.9268E-05 (103)	8.6933E-05 (94)	8.6581E-05 (94)	8.4109E-05 (94)
14	8.9591E-05 (103)	8.1493E-05 (103)	7.8985E-05 (103)	7.7381E-05 (103)	7.6208E-05 (103)
15	7.9230E-05 (103)	7.6708E-05 (103)	7.5992E-05 (103)	7.5559E-05 (103)	7.5262E-05 (103)
16	7.5678E-05 (103)	7.5232E-05 (103)	7.5123E-05 (103)	7.5063E-05 (103)	7.5026E-05 (103)
17	7.5058E-05 (103)	7.5029E-05 (111)	7.5042E-05 (111)	7.5036E-05 (111)	7.5016E-05 (111)
18	7.5027E-05 (111)	7.7086E-05 (111)	8.0406E-05 (111)	8.3690E-05 (111)	8.5196E-05 (111)
19	7.5001E-05 (111)	7.5029E-05 (111)	7.5042E-05 (111)	7.5036E-05 (111)	7.5016E-05 (111)
20	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)
21	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)
22	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)
23	7.5008E-05 (187)	7.5002E-05 (187)	7.5001E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)
24	7.5180E-05 (187)	7.5053E-05 (187)	7.5025E-05 (187)	7.5012E-05 (187)	7.5004E-05 (187)
25	7.6934E-05 (187)	7.5744E-05 (187)	7.5407E-05 (187)	7.5214E-05 (187)	7.5093E-05 (187)
26	8.5560E-05 (187)	7.9882E-05 (187)	7.7950E-05 (187)	7.6716E-05 (187)	7.5856E-05 (187)
27	1.0474E-04 (187)	9.0094E-05 (187)	8.4576E-05 (187)	8.0990E-05 (187)	7.8249E-05 (187)
28	1.1606E-04 (187)	9.6989E-05 (187)	8.9377E-05 (187)	8.2906E-05 (177)	9.6413E-05 (177)
29	1.1730E-04 (187)	9.9298E-05 (188)	1.0491E-04 (177)	1.1092E-04 (177)	1.1220E-04 (177)
30	1.1377E-04 (120)	1.0912E-04 (120)	1.1361E-04 (120)	1.1184E-04 (120)	1.0841E-04 (137)
31	1.1476E-04 (137)	1.1344E-04 (261)	1.1426E-04 (261)	1.1161E-04 (120)	1.0480E-04 (120)
32	1.0239E-04 (77)	1.1229E-04 (77)	1.1448E-04 (261)	1.1281E-04 (137)	1.0816E-04 (137)
33	8.8395E-05 (77)	8.0586E-05 (77)	7.8374E-05 (77)	7.6990E-05 (77)	7.6040E-05 (77)
34	8.3407E-05 (200)	9.0095E-05 (200)	9.7545E-05 (200)	1.0032E-04 (200)	9.7464E-05 (200)
35	1.0647E-04 (200)	9.8215E-05 (200)	9.6852E-05 (200)	9.3943E-05 (200)	8.8966E-05 (200)
36	1.1943E-04 (200)	1.0682E-04 (200)	1.1428E-04 (200)	1.1368E-04 (200)	1.0597E-04 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
57	9.6019E-05	A	2.75
56	9.5392E-05	5	2.75
335	9.5360E-05	A	2.75
177	9.5268E-05	29	5.23
120	9.4538E-05	30	2.75
261	9.4446E-05	31	2.75
62	9.2781E-05	10	3.65
77	9.2058E-05	32	2.07
37	9.2021E-05	A	3.65
137	9.1057E-05	32	3.65
14	9.0657E-05	A	3.65
7	9.0493E-05	A	3.65
26	9.0244E-05	A	2.75
96	9.0139E-05	11	3.65
94	8.9824E-05	11	2.75
187	8.9549E-05	29	1.17
103	8.9149E-05	12	1.17
188	8.8340E-05	29	1.17
111	8.8208E-05	11	1.17
200	8.7890E-05	36	2.75

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PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

SEWARD PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 2 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     75.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
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PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 1120.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	1085.0	1330.0	1200.0	1350.0	1600.0
2	1090.0	1150.0	1370.0	1500.0	1500.0
3	1100.0	1200.0	1250.0	1400.0	1500.0
4	1115.0	1170.0	1400.0	1440.0	1450.0
5	1120.0	1100.0	1250.0	1420.0	1550.0
6	1130.0	1240.0	1140.0	1440.0	1500.0
7	1130.0	1300.0	1100.0	1300.0	1720.0
8	1135.0	1280.0	1400.0	1150.0	1720.0
9	1150.0	1240.0	1350.0	1400.0	1950.0
10	1145.0	1240.0	1450.0	1800.0	2100.0
11	1135.0	1250.0	1500.0	1950.0	1800.0
12	1120.0	1210.0	1550.0	2100.0	2460.0
13	1120.0	1260.0	1500.0	2100.0	2560.0
14	1120.0	1220.0	1500.0	2000.0	2500.0
15	1120.0	1220.0	1400.0	1850.0	2530.0
16	1100.0	1280.0	1350.0	1700.0	2450.0
17	1100.0	1210.0	1450.0	1640.0	2200.0
18	1100.0	1140.0	1350.0	1620.0	1900.0
19	1070.0	1100.0	1200.0	1600.0	1400.0
20	1080.0	1080.0	1100.0	1540.0	1300.0
21	1240.0	1080.0	1080.0	1300.0	1210.0
22	1210.0	1090.0	1080.0	1080.0	1210.0
23	1270.0	1230.0	1150.0	1080.0	1400.0
24	1420.0	1250.0	1200.0	1200.0	1060.0
25	1485.0	1350.0	1240.0	1300.0	1400.0
26	1500.0	1470.0	1300.0	1400.0	1350.0
27	1420.0	1560.0	1470.0	1460.0	1570.0
28	1310.0	1540.0	1540.0	1400.0	1660.0
29	1440.0	1400.0	1400.0	1550.0	1660.0
30	1550.0	1320.0	1400.0	1600.0	1710.0
31	1550.0	1300.0	1540.0	1620.0	1770.0
32	1560.0	1330.0	1400.0	1700.0	1750.0
33	1530.0	1550.0	1550.0	1800.0	1700.0
34	1400.0	1400.0	1680.0	1550.0	1600.0
35	1250.0	1330.0	1300.0	1580.0	1620.0
36	1180.0	1200.0	1350.0	1350.0	1620.0

STACK # 1--SEWARD STACK 1 SRC TSP
STACK # 2--SEWARD STACK 2 SRC NORMAL TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	0.24	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	0.58	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.03 0.93 0.99 1.10 1.03 0.99 1.13 1.09 1.10 0.92 0.87 0.81

YEAR BASED ON 365. DAYS

PENN. ELEC. SEWARD

NOM--SO2

MAXIMUM MEAN CONC= 7.5017E-05 DIRECTION= 8 DISTANCE= 3.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR \ RANGE	1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.50019E-05	7.50022E-05	7.50024E-05	7.50024E-05	7.50023E-05
2	7.50022E-05	7.50025E-05	7.50026E-05	7.50026E-05	7.50025E-05
3	7.50037E-05	7.50046E-05	7.50050E-05	7.50050E-05	7.50045E-05
4	7.50058E-05	7.50077E-05	7.50085E-05	7.50087E-05	7.50079E-05
5	7.50082E-05	7.50120E-05	7.50136E-05	7.50138E-05	7.50122E-05
6	7.50083E-05	7.50100E-05	7.50109E-05	7.50111E-05	7.50101E-05
7	7.50081E-05	7.50117E-05	7.50138E-05	7.50148E-05	7.50140E-05
8	7.50077E-05	7.50128E-05	7.50156E-05	7.50170E-05	7.50162E-05
9	7.50067E-05	7.50093E-05	7.50117E-05	7.50132E-05	7.50132E-05
10	7.50086E-05	7.50108E-05	7.50125E-05	7.50134E-05	7.50126E-05
11	7.50101E-05	7.50119E-05	7.50131E-05	7.50133E-05	7.50121E-05
12	7.50085E-05	7.50087E-05	7.50090E-05	7.50089E-05	7.50082E-05
13	7.50050E-05	7.50048E-05	7.50050E-05	7.50050E-05	7.50048E-05
14	7.50026E-05	7.50026E-05	7.50027E-05	7.50029E-05	7.50026E-05
15	7.50016E-05	7.50017E-05	7.50017E-05	7.50018E-05	7.50019E-05
16	7.50012E-05	7.50014E-05	7.50013E-05	7.50013E-05	7.50013E-05
17	7.50010E-05	7.50010E-05	7.50010E-05	7.50011E-05	7.50011E-05
18	7.50008E-05	7.50009E-05	7.50009E-05	7.50009E-05	7.50008E-05
19	7.50007E-05	7.50009E-05	7.50009E-05	7.50008E-05	7.50006E-05
20	7.50005E-05	7.50009E-05	7.50009E-05	7.50009E-05	7.50008E-05
21	7.50004E-05	7.50008E-05	7.50010E-05	7.50010E-05	7.50009E-05
22	7.50003E-05	7.50007E-05	7.50009E-05	7.50010E-05	7.50010E-05
23	7.50003E-05	7.50008E-05	7.50009E-05	7.50009E-05	7.50007E-05
24	7.50004E-05	7.50009E-05	7.50010E-05	7.50011E-05	7.50010E-05
25	7.50007E-05	7.50013E-05	7.50014E-05	7.50014E-05	7.50013E-05
26	7.50008E-05	7.50012E-05	7.50012E-05	7.50011E-05	7.50010E-05
27	7.50013E-05	7.50016E-05	7.50014E-05	7.50013E-05	7.50011E-05
28	7.50023E-05	7.50020E-05	7.50018E-05	7.50017E-05	7.50018E-05
29	7.50034E-05	7.50032E-05	7.50032E-05	7.50034E-05	7.50036E-05
30	7.50046E-05	7.50048E-05	7.50048E-05	7.50045E-05	7.50039E-05
31	7.50055E-05	7.50076E-05	7.50081E-05	7.50077E-05	7.50067E-05
32	7.50046E-05	7.50079E-05	7.50089E-05	7.50089E-05	7.50078E-05
33	7.50024E-05	7.50037E-05	7.50040E-05	7.50039E-05	7.50034E-05
34	7.50013E-05	7.50019E-05	7.50022E-05	7.50023E-05	7.50023E-05
35	7.50011E-05	7.50014E-05	7.50014E-05	7.50014E-05	7.50013E-05
36	7.50027E-05	7.50030E-05	7.50028E-05	7.50026E-05	7.50021E-05

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 7.5277E-05 DIRECTION=300. DISTANCE= 2.8 KM DAY=120.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.5082E-05 (200)	7.5079E-05 (199)	7.5100E-05 (254)	7.5128E-05 (254)	7.5134E-05 (254)
2	7.5075E-05 (113)	7.5053E-05 (164)	7.5058E-05 (164)	7.5054E-05 (164)	7.5049E-05 (167)
3	7.5110E-05 (208)	7.5093E-05 (349)	7.5098E-05 (349)	7.5095E-05 (263)	7.5089E-05 (263)
4	7.5150E-05 (208)	7.5146E-05 (156)	7.5171E-05 (156)	7.5170E-05 (306)	7.5157E-05 (306)
5	7.5133E-05 (208)	7.5220E-05 (56)	7.5244E-05 (56)	7.5228E-05 (56)	7.5175E-05 (56)
6	7.5130E-05 (189)	7.5134E-05 (39)	7.5150E-05 (332)	7.5165E-05 (332)	7.5152E-05 (332)
7	7.5131E-05 (189)	7.5171E-05 (26)	7.5184E-05 (26)	7.5183E-05 (308)	7.5171E-05 (308)
8	7.5143E-05 (58)	7.5251E-05 (57)	7.5253E-05 (57)	7.5219E-05 (57)	7.5194E-05 (7)
9	7.5155E-05 (183)	7.5125E-05 (9)	7.5145E-05 (9)	7.5136E-05 (9)	7.5135E-05 (124)
10	7.5187E-05 (111)	7.5180E-05 (62)	7.5225E-05 (62)	7.5227E-05 (62)	7.5186E-05 (62)
11	7.5196E-05 (96)	7.5189E-05 (94)	7.5210E-05 (94)	7.5215E-05 (96)	7.5188E-05 (96)
12	7.5201E-05 (103)	7.5151E-05 (79)	7.5159E-05 (275)	7.5164E-05 (275)	7.5139E-05 (275)
13	7.5149E-05 (103)	7.5135E-05 (67)	7.5156E-05 (67)	7.5147E-05 (67)	7.5113E-05 (67)
14	7.5116E-05 (117)	7.5086E-05 (185)	7.5081E-05 (303)	7.5082E-05 (303)	7.5070E-05 (303)
15	7.5099E-05 (219)	7.5072E-05 (219)	7.5060E-05 (220)	7.5062E-05 (86)	7.5073E-05 (86)
16	7.5098E-05 (219)	7.5083E-05 (186)	7.5066E-05 (186)	7.5065E-05 (20)	7.5085E-05 (19)
17	7.5102E-05 (180)	7.5090E-05 (186)	7.5072E-05 (186)	7.5051E-05 (186)	7.5056E-05 (218)
18	7.5117E-05 (180)	7.5094E-05 (180)	7.5071E-05 (180)	7.5050E-05 (180)	7.5044E-05 (210)
19	7.5097E-05 (180)	7.5078E-05 (180)	7.5057E-05 (180)	7.5060E-05 (218)	7.5064E-05 (218)
20	7.5062E-05 (180)	7.5064E-05 (181)	7.5052E-05 (179)	7.5046E-05 (179)	7.5041E-05 (160)
21	7.5060E-05 (218)	7.5081E-05 (181)	7.5079E-05 (218)	7.5078E-05 (218)	7.5065E-05 (218)
22	7.5046E-05 (181)	7.5074E-05 (181)	7.5068E-05 (181)	7.5075E-05 (159)	7.5082E-05 (159)
23	7.5030E-05 (181)	7.5062E-05 (181)	7.5062E-05 (267)	7.5064E-05 (267)	7.5054E-05 (267)
24	7.5035E-05 (179)	7.5066E-05 (267)	7.5081E-05 (267)	7.5079E-05 (267)	7.5063E-05 (267)
25	7.5050E-05 (179)	7.5153E-05 (267)	7.5188E-05 (267)	7.5184E-05 (267)	7.5149E-05 (267)
26	7.5050E-05 (179)	7.5064E-05 (179)	7.5064E-05 (267)	7.5062E-05 (267)	7.5050E-05 (267)
27	7.5076E-05 (187)	7.5086E-05 (73)	7.5097E-05 (73)	7.5090E-05 (73)	7.5068E-05 (73)
28	7.5160E-05 (187)	7.5091E-05 (187)	7.5076E-05 (73)	7.5064E-05 (73)	7.5055E-05 (119)
29	7.5212E-05 (187)	7.5143E-05 (187)	7.5178E-05 (177)	7.5242E-05 (177)	7.5259E-05 (177)
30	7.5228E-05 (120)	7.5267E-05 (120)	7.5277E-05 (120)	7.5252E-05 (120)	7.5192E-05 (120)
31	7.5174E-05 (194)	7.5253E-05 (261)	7.5276E-05 (261)	7.5251E-05 (261)	7.5189E-05 (261)
32	7.5163E-05 (77)	7.5218E-05 (77)	7.5208E-05 (77)	7.5213E-05 (137)	7.5179E-05 (137)
33	7.5091E-05 (112)	7.5103E-05 (6)	7.5121E-05 (6)	7.5116E-05 (6)	7.5090E-05 (6)
34	7.5082E-05 (112)	7.5061E-05 (112)	7.5054E-05 (325)	7.5055E-05 (311)	7.5050E-05 (311)
35	7.5114E-05 (200)	7.5074E-05 (200)	7.5059E-05 (200)	7.5065E-05 (201)	7.5061E-05 (201)
36	7.5177E-05 (200)	7.5182E-05 (200)	7.5188E-05 (200)	7.5175E-05 (200)	7.5137E-05 (200)

PENN. ELEC. SEWARD

NOX--SO2

YEARLY MAXIMUM 3-HOUR CONC= 7.5778E-05 DIRECTION= 60. DISTANCE= 2.8 KM DAY= 39. HOUR= 300.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.5432E-05 (195)	7.5344E-05 (204)	7.5364E-05 (254)	7.5486E-05 (254)	7.5495E-05 (254)
2	7.5444E-05 (238)	7.5294E-05 (113)	7.5282E-05 (113)	7.5308E-05 (83)	7.5321E-05 (205)
3	7.5580E-05 (238)	7.5408E-05 (191)	7.5468E-05 (312)	7.5520E-05 (312)	7.5504E-05 (241)
4	7.5540E-05 (205)	7.5458E-05 (156)	7.5516E-05 (156)	7.5491E-05 (156)	7.5504E-05 (114)
5	7.5698E-05 (237)	7.5498E-05 (3)	7.5690E-05 (3)	7.5752E-05 (3)	7.5663E-05 (3)
6	7.5656E-05 (110)	7.5701E-05 (39)	7.5778E-05 (39)	7.5717E-05 (39)	7.5564E-05 (39)
7	7.5612E-05 (154)	7.5472E-05 (26)	7.5549E-05 (234)	7.5601E-05 (309)	7.5618E-05 (42)
8	7.5542E-05 (58)	7.5517E-05 (93)	7.5498E-05 (19)	7.5515E-05 (234)	7.5484E-05 (234)
9	7.5542E-05 (183)	7.5450E-05 (9)	7.5504E-05 (9)	7.5532E-05 (245)	7.5545E-05 (42)
10	7.5555E-05 (91)	7.5515E-05 (93)	7.5510E-05 (94)	7.5516E-05 (256)	7.5480E-05 (229)
11	7.5628E-05 (97)	7.5508E-05 (93)	7.5590E-05 (81)	7.5637E-05 (81)	7.5568E-05 (81)
12	7.5540E-05 (95)	7.5455E-05 (79)	7.5510E-05 (126)	7.5477E-05 (126)	7.5437E-05 (98)
13	7.5549E-05 (303)	7.5403E-05 (67)	7.5461E-05 (67)	7.5436E-05 (284)	7.5463E-05 (206)
14	7.5409E-05 (117)	7.5419E-05 (185)	7.5359E-05 (185)	7.5405E-05 (302)	7.5383E-05 (302)
15	7.5507E-05 (219)	7.5387E-05 (210)	7.5369E-05 (210)	7.5300E-05 (210)	7.5338E-05 (20)
16	7.5453E-05 (220)	7.5345E-05 (186)	7.5291E-05 (186)	7.5343E-05 (20)	7.5342E-05 (20)
17	7.5459E-05 (180)	7.5366E-05 (186)	7.5282E-05 (186)	7.5303E-05 (218)	7.5315E-05 (218)
18	7.5406E-05 (190)	7.5324E-05 (186)	7.5292E-05 (210)	7.5270E-05 (210)	7.5224E-05 (92)
19	7.5409E-05 (190)	7.5306E-05 (190)	7.5231E-05 (182)	7.5291E-05 (218)	7.5312E-05 (218)
20	7.5384E-05 (218)	7.5320E-05 (181)	7.5247E-05 (181)	7.5214E-05 (179)	7.5256E-05 (219)
21	7.5467E-05 (218)	7.5415E-05 (218)	7.5353E-05 (218)	7.5284E-05 (218)	7.5257E-05 (73)
22	7.5244E-05 (218)	7.5217E-05 (181)	7.5241E-05 (128)	7.5230E-05 (128)	7.5288E-05 (217)
23	7.5154E-05 (196)	7.5271E-05 (181)	7.5309E-05 (267)	7.5343E-05 (267)	7.5308E-05 (218)
24	7.5203E-05 (130)	7.5271E-05 (267)	7.5347E-05 (267)	7.5349E-05 (267)	7.5303E-05 (266)
25	7.5262E-05 (130)	7.5426E-05 (267)	7.5531E-05 (267)	7.5524E-05 (267)	7.5439E-05 (267)
26	7.5310E-05 (130)	7.5314E-05 (179)	7.5328E-05 (267)	7.5316E-05 (267)	7.5255E-05 (267)
27	7.5427E-05 (187)	7.5426E-05 (73)	7.5464E-05 (73)	7.5435E-05 (73)	7.5370E-05 (87)
28	7.5600E-05 (187)	7.5463E-05 (73)	7.5451E-05 (73)	7.5380E-05 (73)	7.5298E-05 (119)
29	7.5545E-05 (197)	7.5355E-05 (188)	7.5376E-05 (177)	7.5457E-05 (177)	7.5476E-05 (177)
30	7.5553E-05 (120)	7.5481E-05 (120)	7.5548E-05 (120)	7.5523E-05 (120)	7.5444E-05 (137)
31	7.5582E-05 (258)	7.5558E-05 (243)	7.5707E-05 (243)	7.5736E-05 (243)	7.5638E-05 (243)
32	7.5617E-05 (258)	7.5524E-05 (244)	7.5560E-05 (261)	7.5527E-05 (261)	7.5448E-05 (258)
33	7.5438E-05 (112)	7.5442E-05 (6)	7.5492E-05 (6)	7.5451E-05 (6)	7.5339E-05 (6)
34	7.5346E-05 (112)	7.5382E-05 (325)	7.5440E-05 (325)	7.5436E-05 (311)	7.5399E-05 (311)
35	7.5460E-05 (200)	7.5338E-05 (200)	7.5319E-05 (200)	7.5277E-05 (201)	7.5271E-05 (201)
36	7.5733E-05 (201)	7.5460E-05 (200)	7.5572E-05 (200)	7.5565E-05 (200)	7.5454E-05 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
120	7.5277E-05	10	2.75
261	7.5276E-05	11	2.75
177	7.5259E-05	29	5.23
57	7.5253E-05	8	2.75
56	7.5244E-05	5	2.75
62	7.5227E-05	10	3.65
77	7.5218E-05	12	2.07
96	7.5215E-05	11	3.65
137	7.5213E-05	32	3.65
335	7.5213E-05	8	2.75
187	7.5212E-05	29	1.17
94	7.5210E-05	11	2.75
14	7.5207E-05	8	3.65
7	7.5205E-05	8	3.65
37	7.5204E-05	8	3.65
26	7.5203E-05	8	2.75
101	7.5201E-05	12	1.17
188	7.5194E-05	29	1.17
111	7.5188E-05	11	1.17
200	7.5188E-05	36	2.75

PENN. ELEC. SEWARD
SOLVENT REFINED COAL STUDY

1975 DATA MAXIMUM LOAD SEWARD

STACK # 1--SEWARD STACK 1 - MAXIMUM LOAD SRC-TSP
STACK # 2--SEWARD STACK 2 - MAXIMUM LOAD SRC-TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	0.36	0.00	68.60	2.40	31.30	449.00	141.60
2	NOM	0.63	0.00	68.60	3.00	32.70	414.00	231.14

RANGE(KM)= 1.17 2.07 2.75 3.65 5.23
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 1 JDAY= 7
ISTAB= 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4
AWS= 7.6 7.6 9.4 8.5 9.4 8.5 8.5 8.1 9.4 8.9 8.9 9.4 7.2 4.0 4.0 4.5 3.6 5.4 6.3 8.1 8.1 6.3 6.3 6.3
TEMP= 273. 273. 273. 273. 273. 273. 273. 273. 273. 274. 274. 275. 276. 277. 277. 277. 277. 276. 276. 277. 277. 277. 277. 277.
AFV= 59. 71. 80. 83. 82. 84. 85. 83. 77. 82. 83. 89. 86. 82. 82. 71. 38. 5. 2. 18. 23. 26. 6. 357.
AFVR= 59. 71. 80. 83. 82. 84. 85. 83. 77. 82. 83. 89. 86. 82. 82. 71. 38. 5. 2. 18. 23. 26. 6. 357.
HLH1= 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800.
1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800. 1800.

JYR=75 IHO= 1 JDAY= 14
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 1 1 2 3 3 3 3 3 3 3 3
AWS= 7.6 8.9 8.1 7.6 7.6 8.1 8.9 10.3 8.9 6.7 6.7 8.5 8.5 8.5 8.1 8.1 7.6 8.1 9.4 9.4 8.5 8.1 8.9 9.4
TEMP= 260. 260. 259. 259. 259. 259. 258. 258. 258. 259. 259. 259. 259. 260. 260. 260. 260. 260. 260. 259. 260. 260. 260. 260.
AFV= 101. 90. 88. 79. 84. 81. 75. 76. 71. 77. 80. 81. 87. 84. 81. 85. 81. 85. 84. 80. 75. 73. 72. 70.
AFVR= 101. 90. 88. 79. 84. 81. 75. 76. 71. 77. 80. 81. 87. 84. 81. 85. 81. 85. 84. 80. 75. 73. 72. 70.
HLH1= 959. 959. 959. 959. 959. 959. 1013. 1067. 1121. 1175. 1228. 1282.
1336. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390. 1390.

JYR=75 IHO= 1 JDAY= 26
ISTAB= 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 4 3 3 3 3
AWS= 11.2 11.6 12.1 13.0 13.9 13.9 14.8 16.1 14.8 15.2 15.6 15.6 15.2 14.8 15.2 16.5 14.3 16.1 13.9 13.0 13.9 13.0 12.5 11.6
TEMP= 271. 271. 271. 271. 270. 270. 270. 269. 269. 269. 269. 269. 269. 268. 267. 267. 267. 267. 267. 267. 266. 266. 266. 266.
AFV= 75. 72. 71. 65. 82. 77. 76. 78. 73. 75. 80. 78. 86. 85. 88. 88. 91. 92. 88. 88. 86. 88. 87. 87.
AFVR= 75. 72. 71. 65. 82. 77. 76. 78. 73. 75. 80. 78. 86. 85. 88. 88. 91. 92. 88. 88. 86. 88. 87. 87.
HLH1= 566. 566. 566. 566. 566. 566. 598. 629. 661. 693. 725. 756.
788. 820. 820. 820. 820. 820. 820. 820. 820. 820. 820. 820.

JYR=75 IHO= 2 JDAY= 37
ISTAB= 3 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
AWS= 8.1 8.5 8.5 9.8 11.2 11.2 10.3 9.4 10.3 10.7 10.7 10.3 10.3 8.5 8.1 7.6 6.7 7.2 6.7 6.3 6.7 6.7 7.6 7.2
TEMP= 272. 272. 273. 274. 274. 274. 273. 273. 272. 271. 271. 271. 271. 271. 271. 271. 271. 271. 271. 270. 270. 270. 270.
AFV= 68. 67. 67. 73. 76. 80. 85. 92. 88. 88. 83. 82. 86. 87. 85. 88. 92. 91. 93. 92. 86. 85. 91. 97.
AFVR= 68. 67. 67. 73. 76. 80. 85. 92. 88. 88. 83. 82. 86. 87. 85. 88. 92. 91. 93. 92. 86. 85. 91. 97.
HLH1= 1100. 1100. 1100. 1100. 1100. 1100. 1094. 1088. 1081. 1075. 1069. 1063.
1056. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050. 1050.

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JYR=75 IMO= 2 JDAY= 56
ISTAR=  1    1    3    3    1    3    1    1    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3    3
AWS= 10.7  8.5  7.2  7.2  8.9 10.7 10.7  9.8 12.5 13.4 15.2 15.2 13.0 13.4 14.5 14.1 14.5 14.5 18.3 18.3 16.1 17.9 20.1 19.2
TEMP= 271. 271. 270. 270. 270. 270. 270. 270. 270. 270. 270. 270. 271. 271. 271. 271. 271. 271. 272. 271. 271. 272. 272. 273.
AFV=   95.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
AFVR=  91.  83.  65.  51.  54.  61.  58.  51.  56.  53.  69.  55.  52.  50.  57.  54.  58.  59.  59.  66.  72.  76.  81.  83.
HLHI= 1700. 1700. 1700. 1700. 1700. 1700. 1609. 1518. 1426. 1335. 1244. 1153.
      1061.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.  970.


JYR=75 IMO= 2 JDAY= 57
ISTAR=  1    3    3    1    3    1    3    3    3    3    3    2    2    1    2    1    3    3    3    3    3    3    3    1
AWS= 19.2 17.4 17.9 16.1 15.2 15.2 13.9 13.9 14.3 16.1 16.5 16.1 15.6 17.0 16.5 15.6 14.3 13.9 13.0 12.5 13.4 13.4 12.1 11.6
TEMP= 272. 271. 271. 271. 271. 271. 270. 270. 270. 271. 272. 273. 274. 274. 275. 275. 274. 274. 274. 273. 273. 273. 272. 272.
AFV=   82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
AFVR=  82.  85.  82.  80.  77.  77.  71.  68.  72.  75.  75.  77.  83.  88.  86.  86.  91.  89.  87.  84.  87.  87.  87.  87.
HLHI= 2000. 2000. 2000. 2000. 2000. 2000. 1968. 1935. 1903. 1870. 1838. 1805.
      1773. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740. 1740.


JYR=75 IMO= 3 JDAY= 62
ISTAR=  1    3    3    1    1    1    3    1    3    2    1    3    1    1    1    3    1    1    1    1    1    3    3    1
AWS=  9.8  9.4  8.5  8.9  8.9  9.8 10.3  9.4  9.4  9.8 10.3 10.7 11.6 11.6 12.1 10.3 10.3 11.2 12.1 10.7 12.5 12.1 10.3  9.8
TEMP= 263. 263. 262. 262. 263. 262. 262. 262. 262. 263. 264. 264. 265. 265. 264. 264. 265. 264. 264. 264. 264. 263. 263. 263.
AFV=  110. 110. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
AFVR= 110. 110. 122. 105. 108. 106. 109. 101. 107. 110. 106. 107. 106. 101. 115. 112. 109. 114. 120. 115. 108. 115. 106. 103.
HLHI= 1050. 1050. 1050. 1050. 1050. 1050. 1174. 1298. 1421. 1545. 1669. 1793.
      1916. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040. 2040.


JYR=75 IMO= 3 JDAY= 77
ISTAR=  4    1    3    3    3    3    3    1    1    2    1    1    1    1    1    2    3    3    3    1    3    3    3    3
AWS=  9.4 10.1  8.9 11.2 13.9 12.5 15.2 14.3 12.5 13.4 15.6 13.0 12.1 13.0 13.4 11.2 14.8 14.3 17.0 18.3 13.9 13.0 13.0 13.4
TEMP= 277. 277. 276. 276. 275. 275. 275. 275. 275. 276. 277. 279. 279. 280. 280. 281. 280. 278. 277. 276. 276. 275. 275. 276.
AFV=  312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
AFVR= 312. 310. 245. 331. 328. 325. 326. 326. 328. 324. 323. 318. 321. 318. 324. 325. 327. 328. 324. 325. 320. 320. 318. 313.
HLHI=  100.  100.  100.  100.  100.  100.  250.  400.  550.  700.  850. 1000.
      1150. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.


JYR=75 IMO= 4 JDAY= 94
ISTAR=  1    3    3    3    1    3    1    1    1    3    3    1    1    1    3    3    3    1    1    1    1    1    1    3
AWS= 15.6 18.8 17.0 17.9 17.9 17.0 15.6 14.8 15.6 11.2 13.0 10.3 11.6 11.2 13.0 12.1 12.1 11.6 11.2 11.2 10.7 10.7 11.2 11.2
TEMP= 266. 266. 265. 265. 265. 265. 265. 264. 265. 265. 266. 266. 268. 269. 270. 270. 269. 268. 266. 266. 266. 266. 265. 265.
AFV=  115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
AFVR= 115. 115. 110. 108. 107. 112. 107. 101. 104. 104. 109. 111. 110. 110. 108. 119. 122. 126. 133. 128. 123. 116. 113. 121.
HLHI= 1000. 1000. 1000. 1000. 1000. 1000. 1106. 1213. 1319. 1425. 1531. 1638.
      1744. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.


JYR=75 IMO= 4 JDAY= 96
ISTAR=  3    3    1    3    3    3    1    1    2    1    1    1    1    1    1    1    2    2    1    3    3    3    3    3
AWS=  6.3  8.1  8.1  7.2  8.1  8.1  8.5  9.4  9.8  9.4  9.8  9.4  9.8 11.2 10.3 11.2 11.6 10.7  8.9  9.8  9.8  8.9  7.6  6.3
TEMP= 266. 267. 267. 266. 266. 267. 267. 267. 268. 269. 270. 271. 271. 272. 272. 272. 271. 271. 270. 269. 268. 268. 267. 268.
AFV=  120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 118. 120.
AFVR= 120. 109. 113. 115. 111. 110. 118. 117. 112. 117. 115. 118. 115. 114. 116. 117. 116. 118. 121. 122. 118. 113. 118. 120.
HLHI=  336.  336.  336.  336.  336.  336.  444.  552.  660.  768.  876.  984.
      1092. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200. 1200.
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JYR=75 IMO= 4 JDAY=103
ISTAR=  4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  3.6  3.1  3.1  2.7  2.2  1.8  1.8  1.3  2.7  3.6  4.5  5.4  6.3  6.3  6.3  6.7  6.7  5.4  4.9  4.0  4.0  3.6  3.6  3.6
TEMP= 270. 270. 270. 270. 270. 270. 271. 271. 272. 273. 275. 276. 277. 277. 277. 277. 277. 276. 275. 274. 274. 272. 272. 272.
AFV=  190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
AFVR= 190. 126. 122. 106.  91.  91.  77.  77. 101. 128. 121. 126. 124. 124. 127. 124. 129. 132. 128. 129. 132. 140. 153. 167.
HLH1=  778.  778.  778.  778.  778.  778. 1029. 1279. 1529. 1779. 2029. 2280.
      2530. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780. 2780.


JYR=75 IMO= 4 JDAY=111
ISTAR=  3    3    3    3    3    4    3    3    1    1    1    1    1    1    1    1    1    1    3    4    4    4    4    4
AWS=  5.8  7.2  6.7  7.2  6.3  6.3  6.7  7.2  7.6  7.2  7.2  7.2  6.7  7.2  6.7  6.7  6.3  6.3  4.9  4.5  3.1  3.1  3.6  3.1
TEMP= 275. 274. 275. 274. 273. 272. 272. 273. 274. 274. 276. 277. 277. 279. 279. 279. 279. 278. 277. 276. 275. 275. 275. 275.
AFV=  180.  78.  89.  90.  97.  96.  87.  95. 108. 109. 111. 119. 118. 114. 101. 111. 105. 103. 115. 120. 122. 128. 147. 156.
AFVR= 180.  78.  89.  90.  97.  96.  87.  95. 108. 109. 111. 119. 118. 114. 101. 111. 105. 103. 115. 120. 122. 128. 147. 156.
HLH1= 2050. 2050. 2050. 2050. 2050. 2050. 2039. 2028. 2016. 2005. 1994. 1983.
      1971. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960. 1960.


JYR=75 IMO= 4 JDAY=120
ISTAR=  3    3    3    3    3    3    3    2    2    1    1    1    1    1    1    1    1    1    2    3    3    3    3    3    3
AWS=  9.4  9.8 10.3  9.8 10.7  9.8 10.3 11.2 11.2 10.7 10.3 11.2 11.2  9.4 11.6 11.6 11.2 10.7 10.3  9.4  9.8 11.2 12.1 12.5
TEMP= 280. 280. 281. 281. 280. 280. 281. 281. 282. 284. 284. 285. 284. 285. 284. 284. 284. 283. 282. 282. 282. 282. 282. 282.
AFV=  310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
AFVR= 310. 311. 311. 308. 305. 304. 306. 307. 302. 303. 303. 305. 305. 309. 295. 309. 310. 307. 308. 303. 308. 309. 305. 308.
HLH1=  600.  600.  600.  600.  600.  600.  600.  720.  840.  960. 1060. 1170.
      1280. 1390. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500. 1500.


JYR=75 IMO= 5 JDAY=137
ISTAR=  4    4    4    4    4    4    3    3    3    3    2    2    2    3    3    3    3    3    3    3    3    3    3    3
AWS=  6.3  6.7 10.3  8.5  6.3  5.8  6.7  7.2  5.8  6.3  6.7  7.6  8.1  7.6  8.1  8.1  9.8  8.9  8.5  8.1  8.5  9.4  9.8  9.4
TEMP= 285. 285. 284. 284. 285. 284. 285. 286. 287. 289. 290. 291. 291. 291. 291. 290. 289. 289. 288. 287. 287. 286. 286. 286.
AFV=  275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
AFVR= 275. 278. 274. 281. 290. 293. 298. 306. 304. 305. 300. 318. 319. 326. 324. 324. 323. 324. 324. 318. 321. 324. 327. 327.
HLH1=  100.  100.  100.  100.  100.  100.  234.  368.  501.  635.  769.  903.
      1036. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170. 1170.


JYR=75 IMO= 6 JDAY=177
ISTAR=  4    3    3    4    4    4    4    3    3    3    3    3    3    3    2    3    3    3    3    3    3    3    3    3
AWS=  5.8  4.9  4.5  4.0  4.9  5.4  5.4  6.7  5.8  5.4  4.9  5.8  6.7  5.4  5.4  5.8  5.8  4.9  5.8  6.7  7.2  7.6  7.2  4.9
TEMP= 291. 291. 291. 291. 291. 291. 290. 290. 290. 291. 290. 290. 290. 290. 291. 292. 291. 290. 289. 290. 289. 289. 289. 289.
AFV=  290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
AFVR= 290. 299. 294. 291. 286. 290. 292. 296. 299. 296. 293. 292. 295. 298. 294. 293. 292. 289. 286. 291. 293. 296. 299. 297.
HLH1=  100.  100.  100.  100.  100.  100.  189.  278.  366.  455.  544.  633.
       721.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.  810.


JYR=75 IMO= 7 JDAY=187
ISTAR=  4    4    4    4    4    4    4    4    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  3.6  3.6  3.1  3.1  3.1  3.1  4.0  4.5  2.7  4.0  4.5  4.5  4.0  4.5  4.0  3.6  4.0  4.5  4.9  5.4  6.3  5.4  5.4  4.5
TEMP= 293. 292. 292. 291. 291. 291. 291. 292. 294. 295. 296. 297. 298. 298. 299. 299. 299. 297. 296. 295. 294. 294. 293. 292.
AFV=  300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
AFVR= 300. 328. 322. 309. 291. 299. 331. 319. 319. 296. 284. 287. 284. 290. 291. 308. 310. 301. 290. 294. 293. 298. 299. 300.
HLH1=  389.  389.  389.  389.  389.  389.  571.  754.  937. 1119. 1302. 1485.
      1667. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850. 1850.
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JYR=75 IMO= 7 JDAY=188
ISTAR=  4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    1    1    1    4    4    4    4    4
AWS=  4.5  3.6  4.0  2.2  2.2  4.0  5.8  4.0  1.6  2.7  2.7  4.5  5.8  4.9  4.9  5.8  4.9  4.9  4.5  4.0  3.1  4.0  4.9  4.0
TEMP= 292. 291. 291. 290. 290. 289. 290. 291. 292. 294. 296. 296. 296. 296. 296. 295. 294. 294. 294. 293. 292. 291. 291. 289.
AFV=  310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
AFVR= 310. 302. 291. 306. 302. 319. 328. 328. 293. 302. 316. 300. 300. 291. 297. 310. 302. 289. 290. 296. 298. 288. 293. 300.
HLH1=  450.  450.  450.  450.  450.  450.  556.  663.  769.  875.  981. 1088.
      1194. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300. 1300.


JYR=75 IMO= 7 JDAY=200
ISTAR=  4    4    4    4    4    3    3    3    3    2    1    1    1    2    2    2    3    3    3    3    3    4    4    4
AWS=  6.7  8.9  8.9  8.9  9.8 10.3 10.3  9.4  9.4  9.4  8.1  8.9  8.1  8.9  9.4  8.9  8.9  7.6  8.9  6.7  6.7  8.1  8.9  9.8
TEMP= 292. 292. 292. 292. 292. 292. 293. 294. 294. 294. 296. 297. 297. 299. 299. 299. 299. 298. 297. 297. 297. 295. 296. 296.
AFV=  350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 150.   0. 340. 340.   0.   0.   0.   0.
AFVR= 350.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.   0. 350. 350.   0. 340. 340.   0.   0.   0.   0.
HLH1= 1100. 1100. 1100. 1100. 1100. 1100. 1154. 1208. 1261. 1315. 1369. 1423.
      1476. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530. 1530.


JYR=75 IMO= 9 JDAY=261
ISTAR=  3    4    4    4    3    4    4    4    3    3    3    3    3    3    3    3    3    3    3    3    3    3    4
AWS=  8.5  9.8 10.7  9.8 10.7 11.2 12.5 12.5 12.1 11.6 14.3 14.3 15.2 13.9 13.9 13.9 13.4 12.5 11.6 12.1 11.2 11.6 10.7  9.4
TEMP= 287. 286. 287. 286. 286. 286. 286. 296. 286. 286. 296. 286. 286. 286. 286. 287. 287. 287. 287. 287. 287. 287. 287. 287.
AFV=  315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
AFVR= 315. 312. 316. 314. 313. 315. 320. 311. 315. 311. 310. 315. 313. 314. 313. 314. 320. 319. 317. 320. 323. 324. 321. 330.
HLH1=  600.  600.  600.  600.  600.  600.  571.  543.  514.  485.  456.  428.
       399.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.  370.


JYR=75 IMO=12 JDAY=335
ISTAR=  3    3    3    3    2    1    3    3    3    3    2    2    2    2    2    3    3    3    3    3    4    4    4    4
AWS= 14.3 14.8 12.5 12.5 15.2 14.8 12.1 12.5 13.9 13.9 15.2 13.9 11.6 13.4 10.7  9.8  9.4  7.6  7.6  7.6  8.9  6.7  5.8  4.9
TEMP= 279. 276. 274. 272. 271. 270. 269. 269. 269. 268. 268. 269. 269. 269. 270. 269. 268. 268. 283. 283. 283. 283. 283. 283.
AFV=   87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
AFVR=  87.  89.  84.  91.  89.  86.  85.  80.  83.  86.  81.  84.  93.  82.  81.  90.  89.  87.  82.  85.  88.  92.  85.  81.
HLH1= 1800. 1800. 1800. 1800. 1800. 1800. 1775. 1750. 1725. 1700. 1675. 1650.
      1625. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600. 1600.

YEAR BASED ON  20. DAYS
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PENN. ELEC. SEWARD

NOM--SO2

MAXIMUM MEAN CONC= 7.5084E-05 DIRECTION= 8 DISTANCE= 2.8 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.50044E-05	7.50020E-05	7.50013E-05	7.50007E-05	7.50004E-05
2	7.50009E-05	7.50003E-05	7.50002E-05	7.50001E-05	7.50001E-05
3	7.50001E-05	7.50001E-05	7.50001E-05	7.50003E-05	7.50006E-05
4	7.50002E-05	7.50002E-05	7.50001E-05	7.50001E-05	7.50000E-05
5	7.50051E-05	7.50147E-05	7.50162E-05	7.50149E-05	7.50114E-05
6	7.50035E-05	7.50075E-05	7.50083E-05	7.50078E-05	7.50061E-05
7	7.50156E-05	7.50326E-05	7.50366E-05	7.50351E-05	7.50282E-05
8	7.50321E-05	7.50717E-05	7.50841E-05	7.50833E-05	7.50685E-05
9	7.50183E-05	7.50196E-05	7.50213E-05	7.50211E-05	7.50178E-05
10	7.50282E-05	7.50317E-05	7.50321E-05	7.50291E-05	7.50222E-05
11	7.50361E-05	7.50383E-05	7.50387E-05	7.50353E-05	7.50275E-05
12	7.50255E-05	7.50208E-05	7.50196E-05	7.50179E-05	7.50146E-05
13	7.50120E-05	7.50066E-05	7.50047E-05	7.50033E-05	7.50020E-05
14	7.50039E-05	7.50017E-05	7.50010E-05	7.50006E-05	7.50003E-05
15	7.50008E-05	7.50003E-05	7.50002E-05	7.50001E-05	7.50000E-05
16	7.50001E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
17	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
18	7.50000E-05	7.50002E-05	7.50005E-05	7.50009E-05	7.50010E-05
19	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
20	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
21	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
22	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
23	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
24	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05	7.50000E-05
25	7.50003E-05	7.50001E-05	7.50001E-05	7.50000E-05	7.50000E-05
26	7.50019E-05	7.50008E-05	7.50005E-05	7.50003E-05	7.50001E-05
27	7.50069E-05	7.50033E-05	7.50020E-05	7.50012E-05	7.50006E-05
28	7.50176E-05	7.50102E-05	7.50076E-05	7.50059E-05	7.50044E-05
29	7.50315E-05	7.50252E-05	7.50258E-05	7.50265E-05	7.50244E-05
30	7.50371E-05	7.50306E-05	7.50276E-05	7.50235E-05	7.50175E-05
31	7.50323E-05	7.50336E-05	7.50314E-05	7.50267E-05	7.50196E-05
32	7.50215E-05	7.50322E-05	7.50339E-05	7.50313E-05	7.50245E-05
33	7.50054E-05	7.50025E-05	7.50015E-05	7.50009E-05	7.50004E-05
34	7.50028E-05	7.50026E-05	7.50028E-05	7.50029E-05	7.50024E-05
35	7.50063E-05	7.50040E-05	7.50032E-05	7.50025E-05	7.50017E-05
36	7.50096E-05	7.50099E-05	7.50102E-05	7.50094E-05	7.50074E-05

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 7.5332E-05 DIRECTION= 80. DISTANCE= 2.8 KM DAY= 57.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.5088E-05 (200)	7.5040E-05 (200)	7.5025E-05 (200)	7.5015E-05 (200)	7.5008E-05 (200)
2	7.5019E-05 (200)	7.5007E-05 (200)	7.5004E-05 (200)	7.5002E-05 (200)	7.5001E-05 (200)
3	7.5003E-05 (200)	7.5001E-05 (200)	7.5001E-05 (7)	7.5005E-05 (7)	7.5012E-05 (7)
4	7.5004E-05 (56)	7.5004E-05 (56)	7.5003E-05 (56)	7.5001E-05 (56)	7.5000E-05 (56)
5	7.5100E-05 (56)	7.5292E-05 (56)	7.5323E-05 (56)	7.5299E-05 (56)	7.5229E-05 (56)
6	7.5030E-05 (56)	7.5080E-05 (56)	7.5089E-05 (56)	7.5085E-05 (56)	7.5067E-05 (56)
7	7.5106E-05 (57)	7.5205E-05 (26)	7.5218E-05 (26)	7.5196E-05 (14)	7.5176E-05 (14)
8	7.5208E-05 (335)	7.5332E-05 (57)	7.5332E-05 (57)	7.5297E-05 (335)	7.5233E-05 (37)
9	7.5107E-05 (111)	7.5093E-05 (335)	7.5114E-05 (37)	7.5145E-05 (37)	7.5143E-05 (37)
10	7.5208E-05 (111)	7.5228E-05 (62)	7.5281E-05 (62)	7.5281E-05 (62)	7.5229E-05 (62)
11	7.5218E-05 (96)	7.5213E-05 (94)	7.5235E-05 (96)	7.5240E-05 (96)	7.5208E-05 (96)
12	7.5224E-05 (103)	7.5126E-05 (103)	7.5119E-05 (94)	7.5114E-05 (94)	7.5093E-05 (96)
13	7.5165E-05 (103)	7.5085E-05 (103)	7.5055E-05 (103)	7.5034E-05 (103)	7.5018E-05 (94)
14	7.5066E-05 (103)	7.5029E-05 (103)	7.5018E-05 (103)	7.5010E-05 (103)	7.5005E-05 (103)
15	7.5015E-05 (103)	7.5006E-05 (103)	7.5003E-05 (103)	7.5002E-05 (103)	7.5001E-05 (103)
16	7.5002E-05 (103)	7.5001E-05 (103)	7.5000E-05 (103)	7.5000E-05 (103)	7.5000E-05 (103)
17	7.5000E-05 (103)	7.5000E-05 (111)	7.5000E-05 (111)	7.5000E-05 (111)	7.5000E-05 (111)
18	7.5000E-05 (111)	7.5004E-05 (111)	7.5011E-05 (111)	7.5017E-05 (111)	7.5020E-05 (111)
19	7.5000E-05 (7)	7.5000E-05 (111)	7.5000E-05 (111)	7.5000E-05 (111)	7.5000E-05 (111)
20	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)
21	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)
22	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)
23	7.5000E-05 (187)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)	7.5000E-05 (7)
24	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)
25	7.5004E-05 (187)	7.5002E-05 (187)	7.5001E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)
26	7.5025E-05 (187)	7.5011E-05 (187)	7.5007E-05 (187)	7.5004E-05 (187)	7.5002E-05 (187)
27	7.5093E-05 (187)	7.5041E-05 (187)	7.5026E-05 (187)	7.5016E-05 (187)	7.5008E-05 (187)
28	7.5174E-05 (187)	7.5098E-05 (187)	7.5065E-05 (187)	7.5041E-05 (187)	7.5045E-05 (177)
29	7.5230E-05 (187)	7.5155E-05 (187)	7.5225E-05 (177)	7.5303E-05 (177)	7.5321E-05 (177)
30	7.5254E-05 (120)	7.5300E-05 (120)	7.5309E-05 (120)	7.5280E-05 (120)	7.5213E-05 (120)
31	7.5141E-05 (120)	7.5284E-05 (261)	7.5308E-05 (261)	7.5278E-05 (261)	7.5208E-05 (261)
32	7.5203E-05 (77)	7.5270E-05 (77)	7.5256E-05 (77)	7.5254E-05 (137)	7.5212E-05 (137)
33	7.5064E-05 (77)	7.5028E-05 (77)	7.5017E-05 (77)	7.5010E-05 (77)	7.5005E-05 (77)
34	7.5037E-05 (200)	7.5044E-05 (200)	7.5053E-05 (200)	7.5055E-05 (200)	7.5047E-05 (200)
35	7.5123E-05 (200)	7.5080E-05 (200)	7.5064E-05 (200)	7.5050E-05 (200)	7.5034E-05 (200)
36	7.5192E-05 (200)	7.5198E-05 (200)	7.5204E-05 (200)	7.5189E-05 (200)	7.5147E-05 (200)

PENN. ELEC. SEWARD

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 7.5701E-05 DIRECTION= 0. DISTANCE= 1.2 KM DAY=200. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 1.2 KM	2.1 KM	2.8 KM	3.7 KM	5.2 KM
1	7.5349E-05 (200)	7.5161E-05 (200)	7.5100E-05 (200)	7.5060E-05 (200)	7.5030E-05 (200)
2	7.5126E-05 (200)	7.5046E-05 (200)	7.5026E-05 (200)	7.5015E-05 (200)	7.5007E-05 (200)
3	7.5023E-05 (200)	7.5007E-05 (200)	7.5011E-05 (7)	7.5041E-05 (7)	7.5096E-05 (7)
4	7.5010E-05 (56)	7.5008E-05 (56)	7.5005E-05 (56)	7.5002E-05 (56)	7.5001E-05 (56)
5	7.5278E-05 (56)	7.5582E-05 (56)	7.5583E-05 (56)	7.5550E-05 (56)	7.5436E-05 (56)
6	7.5109E-05 (56)	7.5200E-05 (56)	7.5198E-05 (26)	7.5186E-05 (56)	7.5165E-05 (56)
7	7.5371E-05 (57)	7.5572E-05 (57)	7.5581E-05 (57)	7.5550E-05 (26)	7.5467E-05 (14)
8	7.5547E-05 (335)	7.5583E-05 (57)	7.5595E-05 (335)	7.5561E-05 (7)	7.5505E-05 (335)
9	7.5420E-05 (335)	7.5374E-05 (26)	7.5453E-05 (56)	7.5522E-05 (56)	7.5493E-05 (37)
10	7.5534E-05 (111)	7.5554E-05 (94)	7.5567E-05 (94)	7.5538E-05 (62)	7.5461E-05 (62)
11	7.5593E-05 (96)	7.5566E-05 (94)	7.5558E-05 (94)	7.5547E-05 (94)	7.5510E-05 (96)
12	7.5575E-05 (103)	7.5334E-05 (103)	7.5383E-05 (94)	7.5385E-05 (96)	7.5320E-05 (96)
13	7.5449E-05 (103)	7.5225E-05 (103)	7.5189E-05 (94)	7.5183E-05 (94)	7.5144E-05 (94)
14	7.5230E-05 (103)	7.5102E-05 (103)	7.5063E-05 (103)	7.5037E-05 (103)	7.5019E-05 (103)
15	7.5067E-05 (103)	7.5027E-05 (103)	7.5016E-05 (103)	7.5009E-05 (103)	7.5004E-05 (103)
16	7.5011E-05 (103)	7.5004E-05 (103)	7.5002E-05 (103)	7.5001E-05 (103)	7.5000E-05 (103)
17	7.5001E-05 (103)	7.5000E-05 (111)	7.5001E-05 (111)	7.5001E-05 (111)	7.5000E-05 (111)
18	7.5000E-05 (111)	7.5034E-05 (111)	7.5087E-05 (111)	7.5138E-05 (111)	7.5162E-05 (111)
19	7.5000E-05 (111)	7.5000E-05 (111)	7.5001E-05 (111)	7.5001E-05 (111)	7.5000E-05 (111)
20	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)
21	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)
22	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)	7.5000E-05 (335)
23	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (335)	7.5000E-05 (335)
24	7.5003E-05 (187)	7.5001E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)	7.5000E-05 (187)
25	7.5031E-05 (187)	7.5012E-05 (187)	7.5006E-05 (187)	7.5003E-05 (187)	7.5001E-05 (187)
26	7.5167E-05 (187)	7.5077E-05 (187)	7.5046E-05 (187)	7.5027E-05 (187)	7.5013E-05 (187)
27	7.5462E-05 (187)	7.5238E-05 (187)	7.5152E-05 (187)	7.5094E-05 (187)	7.5051E-05 (187)
28	7.5649E-05 (187)	7.5347E-05 (187)	7.5226E-05 (187)	7.5285E-05 (177)	7.5339E-05 (177)
29	7.5590E-05 (187)	7.5384E-05 (188)	7.5474E-05 (177)	7.5569E-05 (177)	7.5588E-05 (177)
30	7.5512E-05 (120)	7.5541E-05 (120)	7.5611E-05 (120)	7.5582E-05 (120)	7.5528E-05 (137)
31	7.5629E-05 (137)	7.5609E-05 (261)	7.5621E-05 (261)	7.5579E-05 (120)	7.5470E-05 (120)
32	7.5432E-05 (77)	7.5590E-05 (77)	7.5625E-05 (261)	7.5598E-05 (137)	7.5524E-05 (137)
33	7.5211E-05 (77)	7.5088E-05 (77)	7.5053E-05 (77)	7.5031E-05 (77)	7.5016E-05 (77)
34	7.5133E-05 (200)	7.5241E-05 (200)	7.5358E-05 (200)	7.5401E-05 (200)	7.5355E-05 (200)
35	7.5497E-05 (200)	7.5367E-05 (200)	7.5345E-05 (200)	7.5299E-05 (200)	7.5220E-05 (200)
36	7.5701E-05 (200)	7.5506E-05 (200)	7.5622E-05 (200)	7.5611E-05 (200)	7.5489E-05 (200)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
57	7.5332E-05	8	2.75
56	7.5323E-05	5	2.75
335	7.5322E-05	8	2.75
177	7.5321E-05	29	5.23
120	7.5309E-05	30	2.75
261	7.5308E-05	31	2.75
62	7.5281E-05	10	3.65
77	7.5270E-05	32	2.07
37	7.5269E-05	8	3.65
137	7.5254E-05	32	3.65
14	7.5248E-05	8	3.65
7	7.5246E-05	8	3.65
24	7.5241E-05	8	2.75
96	7.5240E-05	11	3.65
94	7.5235E-05	11	2.75
187	7.5230E-05	29	1.17
103	7.5224E-05	12	1.17
188	7.5211E-05	29	1.17
111	7.5209E-05	11	1.17
200	7.5204E-05	36	2.75

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT 1975

&NAMI
KSTL=4  IOR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   HHGT= 91.0  NST= 1
NPOL= 2   JTAB= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   CUTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     65.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
```

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 775.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	760.0	750.0	760.0	970.0	1300.0
2	760.0	750.0	1120.0	825.0	960.0
3	755.0	750.0	740.0	800.0	1000.0
4	750.0	750.0	740.0	1100.0	1100.0
5	750.0	750.0	740.0	900.0	1060.0
6	740.0	745.0	1020.0	1160.0	1000.0
7	780.0	780.0	920.0	1000.0	1100.0
8	820.0	920.0	880.0	1060.0	800.0
9	860.0	830.0	720.0	1000.0	960.0
10	890.0	740.0	720.0	800.0	920.0
11	920.0	720.0	760.0	960.0	1020.0
12	850.0	740.0	720.0	1070.0	1000.0
13	780.0	720.0	960.0	1060.0	1000.0
14	750.0	740.0	1150.0	1020.0	1080.0
15	740.0	900.0	1020.0	800.0	1020.0
16	730.0	800.0	1060.0	780.0	940.0
17	730.0	900.0	1020.0	1010.0	720.0
18	740.0	960.0	1020.0	1020.0	900.0
19	740.0	820.0	720.0	800.0	780.0
20	740.0	760.0	970.0	720.0	1040.0
21	730.0	720.0	980.0	720.0	750.0
22	760.0	780.0	920.0	800.0	980.0
23	760.0	860.0	1100.0	1040.0	1020.0
24	760.0	840.0	1100.0	950.0	760.0
25	760.0	760.0	820.0	1100.0	900.0
26	760.0	780.0	840.0	1140.0	740.0
27	760.0	800.0	1080.0	1140.0	800.0
28	760.0	900.0	1040.0	1100.0	1200.0
29	780.0	1060.0	890.0	900.0	1400.0
30	780.0	1160.0	1060.0	1060.0	1400.0
31	790.0	1080.0	1100.0	1100.0	1100.0
32	805.0	1120.0	1040.0	1040.0	1100.0
33	795.0	1140.0	1020.0	1020.0	1100.0
34	805.0	1010.0	1020.0	1000.0	1400.0
35	770.0	1020.0	830.0	1000.0	1500.0
36	755.0	760.0	800.0	1040.0	1600.0

STACK # 1--KINGSTON STACKS#1-4, NORMAL POWER LOAD-COAL TSP
STACK # 2--KINGSTON STACKS#5-9, NORMAL POWER LOAD-COAL TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	546.00	0.00	76.20	4.27	10.90	416.00	156.09
2	NOM	593.00	0.00	91.44	5.03	10.50	414.00	208.65

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.07 1.08 1.24 1.13 1.07 1.04 0.91 0.74 0.83 0.88 0.93 1.07

YEAR BASED ON 365. DAYS

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 9.5489E-05 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	8.31493E-05	8.15154E-05	7.78609E-05	7.29757E-05	6.99145E-05
2	8.40070E-05	8.07262E-05	7.61972E-05	7.27401E-05	7.03428E-05
3	8.56358E-05	8.20842E-05	7.81175E-05	7.50313E-05	7.21065E-05
4	8.60230E-05	8.23640E-05	7.72718E-05	7.35804E-05	7.11316E-05
5	8.25207E-05	7.93636E-05	7.55073E-05	7.27197E-05	7.06392E-05
6	7.62867E-05	7.39572E-05	[illegible]186E-05	6.98394E-05	6.89652E-05
7	7.15943E-05	7.03412E-05	[illegible]00E-05	6.79852E-05	6.73443E-05
8	6.96402E-05	6.87949E-05	6.79959E-05	6.76312E-05	6.69972E-05
9	6.93092E-05	6.81673E-05	6.71621E-05	6.68287E-05	6.63574E-05
10	6.95168E-05	6.82904E-05	6.72907E-05	6.69744E-05	6.65166E-05
11	6.95293E-05	6.82694E-05	6.72551E-05	6.69360E-05	6.64228E-05
12	6.97175E-05	6.84411E-05	6.74020E-05	6.79396E-05	6.73538E-05
13	7.07441E-05	6.90816E-05	6.82485E-05	6.80624E-05	6.71590E-05
14	7.33444E-05	7.10104E-05	6.96869E-05	6.91965E-05	6.80045E-05
15	7.71599E-05	7.39251E-05	7.21759E-05	7.14938E-05	6.94097E-05
16	8.00188E-05	7.68835E-05	7.48149E-05	7.81282E-05	7.38800E-05
17	7.81961E-05	7.52451E-05	7.32486E-05	7.22560E-05	7.02450E-05
18	7.32384E-05	7.13062E-05	6.96261E-05	6.83141E-05	6.72182E-05
19	6.95082E-05	6.85032E-05	6.74914E-05	6.67500E-05	6.63123E-05
20	6.83314E-05	6.80762E-05	6.72780E-05	6.64145E-05	6.60023E-05
21	6.89061E-05	6.92820E-05	6.86711E-05	6.77207E-05	6.69493E-05
22	6.97955E-05	7.06185E-05	7.01558E-05	6.90689E-05	6.83412E-05
23	6.98055E-05	7.10018E-05	7.08234E-05	6.94698E-05	6.87448E-05
24	6.88222E-05	7.00915E-05	7.02410E-05	6.90913E-05	6.84316E-05
25	6.77733E-05	6.87479E-05	6.90510E-05	6.85111E-05	6.78384E-05
26	6.72924E-05	6.79495E-05	6.77551E-05	6.68375E-05	6.63500E-05
27	6.73090E-05	6.79972E-05	6.79523E-05	6.72269E-05	6.70267E-05
28	6.73102E-05	6.80616E-05	6.79857E-05	6.71037E-05	6.66473E-05
29	6.69487E-05	6.76014E-05	6.74144E-05	6.66712E-05	6.63718E-05
30	6.64626E-05	6.70680E-05	6.72441E-05	6.66134E-05	6.62587E-05
31	6.61536E-05	6.65191E-05	6.68565E-05	6.65302E-05	6.62249E-05
32	6.64542E-05	6.65035E-05	6.62854E-05	6.59009E-05	6.57002E-05
33	6.80571E-05	6.82469E-05	6.76464E-05	6.67230E-05	6.62923E-05
34	7.10659E-05	7.19059E-05	7.10357E-05	6.87362E-05	6.75054E-05
35	7.41836E-05	7.54113E-05	7.39080E-05	7.09363E-05	6.93323E-05
36	9.54894E-05	9.50419E-05	8.89087E-05	7.95190E-05	7.35805E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 4.9478E-04 DIRECTION=360. DISTANCE= 1.3 KM DAY=315.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.8291E-04 (298)	2.1286E-04 (315)	1.7530E-04 (284)	1.4182E-04 (262)	1.1034E-04 (341)
2	3.3851E-04 (298)	2.5764E-04 (326)	1.9003E-04 (326)	1.5178E-04 (37)	1.5828E-04 (234)
3	3.0838E-04 (293)	2.2119E-04 (276)	2.0179E-04 (255)	2.6030E-04 (262)	2.0027E-04 (262)
4	3.3605E-04 (292)	2.4547E-04 (292)	1.9925E-04 (260)	2.0673E-04 (260)	1.4643E-04 (260)
5	3.6039E-04 (340)	2.7752E-04 (340)	1.9615E-04 (340)	2.2122E-04 (139)	1.6032E-04 (139)
6	2.7905E-04 (330)	2.0077E-04 (340)	1.6187E-04 (187)	1.3339E-04 (238)	1.2566E-04 (238)
7	2.1512E-04 (330)	1.5679E-04 (306)	1.3733E-04 (174)	1.4455E-04 (174)	1.1493E-04 (174)
8	2.4396E-04 (306)	1.8626E-04 (322)	1.5348E-04 (140)	2.2141E-04 (140)	2.1341E-04 (140)
9	2.7004E-04 (295)	1.6656E-04 (322)	1.3189E-04 (243)	1.2917E-04 (174)	1.1997E-04 (140)
10	2.6983E-04 (295)	1.7909E-04 (280)	1.6236E-04 (1)	1.5292E-04 (1)	1.3609E-04 (140)
11	2.5050E-04 (295)	2.6197E-04 (280)	2.0011E-04 (280)	1.4962E-04 (280)	1.2498E-04 (209)
12	2.3745E-04 (295)	2.2370E-04 (280)	1.7956E-04 (280)	1.8259E-04 (280)	1.6272E-04 (280)
13	2.5971E-04 (307)	2.0743E-04 (307)	1.6315E-04 (287)	2.1321E-04 (287)	1.7055E-04 (287)
14	2.8812E-04 (307)	2.1672E-04 (307)	1.8537E-04 (167)	2.0426E-04 (167)	1.7879E-04 (192)
15	3.3293E-04 (342)	2.2690E-04 (342)	1.8305E-04 (222)	1.7589E-04 (167)	1.6183E-04 (193)
16	4.1306E-04 (331)	3.1093E-04 (331)	3.1947E-04 (241)	3.8165E-04 (241)	2.6807E-04 (241)
17	3.5751E-04 (332)	2.8901E-04 (359)	2.3387E-04 (359)	2.7234E-04 (204)	2.0114E-04 (204)
18	2.9304E-04 (332)	2.1206E-04 (332)	1.4776E-04 (252)	1.4628E-04 (252)	1.2004E-04 (252)
19	2.0089E-04 (338)	1.6294E-04 (360)	1.1614E-04 (252)	1.2902E-04 (333)	1.1082E-04 (333)
20	1.7781E-04 (338)	1.4698E-04 (360)	1.1598E-04 (193)	9.5519E-05 (193)	8.7611E-05 (119)
21	1.9743E-04 (152)	2.2175E-04 (30)	1.9634E-04 (30)	1.4660E-04 (30)	1.1419E-04 (29)
22	2.6745E-04 (152)	1.9967E-04 (152)	1.6999E-04 (30)	1.5661E-04 (30)	1.5512E-04 (282)
23	2.3020E-04 (152)	1.9783E-04 (314)	1.6610E-04 (317)	1.4950E-04 (282)	1.8100E-04 (282)
24	2.2072E-04 (302)	2.4990E-04 (302)	1.9279E-04 (302)	1.4857E-04 (302)	1.2894E-04 (363)
25	1.8991E-04 (302)	2.0304E-04 (302)	1.5001E-04 (302)	1.6279E-04 (363)	1.8405E-04 (208)
26	1.6547E-04 (317)	1.5306E-04 (317)	1.2374E-04 (317)	9.7706E-05 (317)	9.2828E-05 (21)
27	1.6357E-04 (314)	1.5257E-04 (314)	1.3651E-04 (350)	1.1664E-04 (317)	1.2792E-04 (349)
28	1.9833E-04 (314)	1.8831E-04 (314)	1.5278E-04 (312)	1.2195E-04 (312)	9.6333E-05 (25)
29	1.6273E-04 (314)	1.5211E-04 (314)	1.2466E-04 (334)	1.1385E-04 (125)	1.0176E-04 (349)
30	1.3000E-04 (33)	1.3689E-04 (33)	1.2721E-04 (297)	9.8666E-05 (297)	8.9732E-05 (304)
31	1.3917E-04 (179)	1.2894E-04 (33)	1.2563E-04 (285)	1.0411E-04 (285)	1.0865E-04 (349)
32	1.4669E-04 (179)	1.2043E-04 (179)	9.4937E-05 (334)	8.5413E-05 (139)	9.1402E-05 (304)
33	1.3502E-04 (179)	1.2207E-04 (48)	1.2080E-04 (107)	1.0827E-04 (107)	9.9003E-05 (16)
34	1.5737E-04 (42)	1.5260E-04 (297)	1.6557E-04 (16)	1.3490E-04 (16)	1.0990E-04 (16)
35	1.9152E-04 (269)	1.6610E-04 (269)	1.4860E-04 (16)	1.1759E-04 (31)	1.2460E-04 (22)
36	4.8554E-04 (319)	4.9478E-04 (315)	3.3648E-04 (315)	1.9657E-04 (356)	1.3546E-04 (116)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.8361E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	1.2344E-03 (321)	8.2922E-04 (262)	6.4594E-04 (341)	5.8607E-04 (341)	4.2771E-04 (310)
2	1.3281E-03 (293)	9.2909E-04 (326)	6.2713E-04 (341)	6.8050E-04 (341)	6.7352E-04 (234)
3	1.1625E-03 (255)	8.5545E-04 (276)	6.6014E-04 (294)	8.2235E-04 (294)	7.0787E-04 (234)
4	1.3820E-03 (292)	8.5826E-04 (6)	6.0491E-04 (260)	5.5603E-04 (260)	3.7497E-04 (161)
5	1.3194E-03 (325)	8.3785E-04 (275)	5.6622E-04 (301)	6.1015E-04 (139)	4.9679E-04 (141)
6	1.1295E-03 (320)	7.4388E-04 (320)	5.0339E-04 (187)	6.1146E-04 (238)	5.5011E-04 (238)
7	9.4118E-04 (253)	6.2985E-04 (322)	5.1671E-04 (207)	4.7264E-04 (209)	3.4561E-04 (209)
8	1.1180E-03 (295)	8.5458E-04 (322)	4.8097E-04 (180)	6.8164E-04 (214)	4.8238E-04 (140)
9	1.2479E-03 (295)	6.9207E-04 (322)	3.9825E-04 (322)	5.3553E-04 (174)	4.7305E-04 (174)
10	1.1341E-03 (295)	7.1309E-04 (236)	4.3090E-04 (306)	5.1681E-04 (1)	4.3075E-04 (1)
11	1.2052E-03 (301)	7.8660E-04 (280)	5.3142E-04 (280)	5.1375E-04 (330)	3.8867E-04 (267)
12	1.0936E-03 (301)	6.8376E-04 (280)	4.7808E-04 (280)	4.4658E-04 (217)	4.4663E-04 (280)
13	9.9380E-04 (291)	6.7779E-04 (307)	4.9177E-04 (295)	5.5196E-04 (192)	5.4737E-04 (192)
14	1.2591E-03 (290)	8.4348E-04 (290)	5.5825E-04 (251)	6.8636E-04 (251)	4.7809E-04 (251)
15	1.0248E-03 (309)	7.0730E-04 (217)	6.9145E-04 (240)	6.7215E-04 (217)	5.1936E-04 (193)
16	1.2523E-03 (331)	7.5841E-04 (256)	6.5280E-04 (230)	7.8555E-04 (283)	5.4170E-04 (283)
17	1.1022E-03 (190)	9.0898E-04 (359)	6.7924E-04 (359)	6.4763E-04 (231)	5.1293E-04 (342)
18	1.0730E-03 (353)	7.7051E-04 (281)	5.4965E-04 (281)	4.7055E-04 (252)	3.9666E-04 (20)
19	1.0340E-03 (338)	6.6555E-04 (338)	3.8888E-04 (281)	5.3665E-04 (333)	4.1291E-04 (333)
20	9.4638E-04 (338)	5.9686E-04 (338)	4.1317E-04 (280)	2.6560E-04 (347)	2.3388E-04 (358)
21	8.9632E-04 (333)	7.9860E-04 (333)	7.3867E-04 (30)	4.5643E-04 (29)	4.0923E-04 (29)
22	9.9477E-04 (152)	7.7420E-04 (206)	6.4747E-04 (232)	4.9471E-04 (282)	6.2285E-04 (282)
23	9.1929E-04 (343)	7.8399E-04 (314)	6.3088E-04 (232)	5.4455E-04 (282)	6.4469E-04 (282)
24	8.7207E-04 (302)	8.6153E-04 (302)	6.1090E-04 (302)	4.9058E-04 (127)	5.4932E-04 (283)
25	7.6354E-04 (302)	7.1459E-04 (302)	4.5552E-04 (302)	5.9636E-04 (363)	5.7536E-04 (363)
26	7.3440E-04 (317)	6.1439E-04 (317)	4.4656E-04 (265)	2.5908E-04 (349)	2.8740E-04 (21)
27	6.7810E-04 (314)	5.9144E-04 (314)	5.6218E-04 (350)	3.4612E-04 (350)	4.0033E-04 (349)
28	9.0114E-04 (314)	8.1012E-04 (314)	5.5959E-04 (312)	3.7704E-04 (312)	3.0095E-04 (232)
29	6.7810E-04 (314)	6.1434E-04 (334)	4.3508E-04 (334)	3.4527E-04 (125)	3.5903E-04 (349)
30	5.8495E-04 (33)	6.2985E-04 (33)	4.2999E-04 (285)	3.2112E-04 (46)	2.6286E-04 (304)
31	6.0296E-04 (179)	5.7228E-04 (33)	5.4936E-04 (285)	3.7774E-04 (285)	4.1418E-04 (349)
32	6.9197E-04 (179)	4.6022E-04 (179)	2.9913E-04 (334)	2.2830E-04 (139)	2.7622E-04 (304)
33	6.2225E-04 (179)	5.2153E-04 (48)	4.1711E-04 (107)	2.6631E-04 (334)	2.6021E-04 (311)
34	7.9621E-04 (48)	7.1117E-04 (48)	5.5949E-04 (16)	3.6521E-04 (16)	3.6467E-04 (289)
35	9.6225E-04 (269)	7.6853E-04 (269)	5.8884E-04 (16)	3.5208E-04 (168)	4.3829E-04 (289)
36	1.8361E-03 (308)	1.3799E-03 (319)	9.3647E-04 (356)	6.2301E-04 (183)	4.7010E-04 (186)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
315	4.9478E-04	36	1.33
319	4.8554E-04	36	0.71
308	4.4835E-04	36	0.71
356	4.1485E-04	36	1.33
331	4.1306E-04	16	0.71
222	3.8651E-04	16	0.71
241	3.8165E-04	16	4.65
284	3.7843E-04	36	0.71
355	3.7052E-04	36	1.33
340	3.6039E-04	5	0.71
342	3.5830E-04	16	0.71
332	3.5751E-04	17	0.71
231	3.5157E-04	16	0.71
354	3.4500E-04	36	0.71
218	3.4230E-04	16	0.71
298	3.3851E-04	2	0.71
292	3.3605E-04	4	0.71
17	3.2522E-04	36	0.71
321	3.2459E-04	36	0.71
185	3.2437E-04	36	0.71

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT-MAXIMUM POWER LOAD CONDITIONS-COAL TSP

STACK # 1--KINGSTON STACKS#1-4, MAX.LOAD COAL TSP
STACK # 2--KINGSTON STACKS#5-9, MAX.LOAD COAL TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	768.00	0.00	76.20	4.27	14.26	427.40	204.20
2	NOM	745.00	0.00	91.44	5.03	13.66	421.80	271.44

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IMO= 6 JDAY=168

ISTAB=	4	4	4	4	4	4	4	4	4	3	2	1	1	1	3	3	3	4	4	4	4	4	4	4
AWS=	2.9	1.7	1.3	2.5	0.9	1.7	1.5	1.1	0.8	1.6	3.0	4.0	4.4	5.9	7.0	6.9	7.1	7.3	7.2	6.6	5.6	5.9	5.9	4.7
TEMP=	292.	292.	291.	291.	290.	290.	290.	290.	292.	294.	296.	298.	300.	301.	302.	302.	303.	303.	303.	302.	300.	299.	298.	296.
AFV=	305.	295.	334.	323.	26.	238.	333.	4.	317.	358.	356.	350.	2.	0.	9.	30.	29.	30.	27.	25.	11.	26.	29.	51.
AFVR=	305.	295.	334.	323.	26.	238.	333.	4.	317.	358.	356.	350.	2.	0.	9.	30.	29.	30.	27.	25.	11.	26.	29.	51.
HLH1=	2134.	2134.	2134.	2134.	2134.	2134.	2134.	2058.	1982.	1906.	1830.	1754.												
	1678.	1602.	1524.	1524.	1524.	1524.	1524.	1524.	1524.	1524.	1524.	1524.												

JYR=75 IMO=12 JDAY=336

ISTAB=	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	3	4	4	4	4	4	4	4
AWS=	2.6	2.2	1.6	1.3	1.0	1.0	0.9	0.5	0.9	1.8	2.0	2.8	3.3	3.8	3.8	3.7	3.7	4.4	4.4	3.8	3.9	3.8	2.7	3.0
TEMP=	273.	272.	271.	271.	270.	270.	270.	269.	270.	272.	275.	278.	281.	282.	284.	284.	284.	283.	281.	279.	277.	277.	275.	275.
AFV=	208.	239.	259.	239.	129.	141.	16.	5.	59.	74.	2.	58.	2.	1.	8.	39.	38.	20.	15.	54.	60.	46.	53.	83.
AFVR=	208.	239.	259.	239.	129.	141.	16.	5.	59.	74.	2.	58.	2.	1.	8.	39.	38.	20.	15.	54.	60.	46.	53.	83.
HLH1=	305.	305.	305.	305.	305.	305.	305.	381.	457.	533.	609.	685.												
	761.	837.	914.	914.	914.	914.	914.	914.	914.	914.	914.	914.												

JYR=76 IMO= 1 JDAY= 4

ISTAB=	3	4	4	3	3	4	4	4	3	1	1	1	1	1	1	1	3	4	4	4	4	4	4	4
AWS=	5.0	7.2	7.6	7.3	8.7	7.9	7.7	6.4	6.1	5.4	6.2	7.5	6.2	5.7	6.3	6.4	5.9	6.4	6.7	8.1	8.6	7.1	6.2	6.0
TEMP=	272.	271.	270.	270.	268.	267.	266.	266.	266.	266.	267.	267.	268.	269.	270.	270.	270.	269.	268.	267.	267.	266.	266.	265.
AFV=	154.	162.	152.	143.	162.	150.	165.	168.	168.	169.	160.	173.	167.	162.	176.	178.	163.	163.	162.	162.	161.	163.	178.	179.
AFVR=	154.	162.	152.	143.	162.	150.	165.	168.	168.	169.	160.	173.	167.	162.	176.	178.	163.	163.	162.	162.	161.	163.	178.	179.
HLH1=	400.	400.	400.	400.	400.	400.	400.	438.	476.	514.	552.	590.												
	628.	666.	710.	710.	710.	710.	710.	710.	710.	710.	710.	710.												

JYR=76 IMO= 1 JDAY= 8

ISTAB=	4	4	3	3	3	3	3	3	2	1	1	1	1	1	1	2	3	3	4	3	4	4	4
AWS=	7.2	8.0	10.6	11.0	10.3	11.2	10.7	8.2	9.6	9.3	9.2	9.0	6.6	6.9	6.8	7.5	7.2	7.3	5.8	5.9	5.8	6.8	6.1	5.1
TEMP=	276.	275.	274.	272.	271.	270.	269.	268.	268.	267.	267.	268.	267.	267.	267.	266.	266.	265.	264.	264.	264.	263.	262.	262.
AFV=	147.	142.	153.	158.	167.	160.	164.	163.	163.	163.	161.	161.	165.	167.	164.	174.	164.	150.	163.	164.	151.	150.	150.	150.
AFVR=	147.	142.	153.	158.	167.	160.	164.	163.	163.	163.	161.	161.	165.	167.	164.	174.	164.	150.	163.	164.	151.	150.	150.	150.
HLH1=	853.	853.	853.	853.	853.	853.	853.	853.	868.	883.	898.	913.	928.											

```
JYR=76 IHO= 1 JDAY= 17
ISTAR=  3    3    3    1    3    3    3    1    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS= 10.1  8.7 10.6  9.3  7.2  8.9 10.2  8.9  7.7  8.2 10.2 10.6 10.5 10.1 10.2  9.1  8.1  8.1  8.1  6.1  5.7  6.1  5.5  4.6  5.7
TEMP= 273. 272. 272. 271. 270. 270. 269. 267. 267. 267. 267. 268. 268. 268. 268. 268. 268. 267. 267. 267. 267. 266. 266. 265. 265.
AFV=  164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
AFVR= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
HLHI=  400.  400.  400.  400.  400.  400.  400.  427.  454.  481.  508.  535.
       562.  589.  617.  617.  617.  617.  617.  617.  617.  617.  617.  617.


JYR=76 IHO= 1 JDAY= 27
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    1    1    1    3    3    4    4    4    4    4    4
AWS=  6.4  5.2  6.4  7.2  7.6  8.0  8.1  8.9  8.8  8.4  8.1  7.5  8.2  7.5  9.1  6.7  8.0  7.2  5.7  3.9  2.8  2.3  4.2  6.3
TEMP= 275. 275. 275. 274. 274. 274. 274. 274. 273. 273. 273. 273. 273. 273. 273. 273. 272. 272. 272. 272. 271. 271. 270. 270.
AFV=  170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
AFVR= 170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
HLHI=  457.  457.  457.  457.  457.  457.  457.  521.  585.  649.  713.  777.
       841.  905.  975.  975.  975.  975.  975.  975.  975.  975.  975.  975.


JYR=76 IHO= 3 JDAY= 70
ISTAR=  4    4    4    4    4    4    4    4    3    3    3    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.1  4.3  4.1  3.5  3.6  4.4  3.3  2.7  1.4  0.9  1.7  2.4  2.6  2.6  2.5  4.0  4.4  3.8  3.9  3.8  1.2  1.0  0.5  0.7
TEMP= 276. 276. 275. 275. 274. 273. 273. 273. 274. 276. 278. 281. 283. 284. 285. 287. 287. 287. 286. 285. 283. 282. 280. 279.
AFV=  155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
AFVR= 155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IHO= 3 JDAY= 78
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    2    3    3    4    4    4    4    4    4
AWS=  1.5  2.7  3.3  2.5  2.0  2.7  3.2  3.9  3.2  4.8  4.4  4.5  5.0  6.3  6.0  6.3  6.9  5.6  5.9  6.7  6.8  6.8  5.1  4.8
TEMP= 273. 272. 271. 271. 271. 271. 271. 271. 273. 278. 282. 285. 288. 289. 291. 291. 291. 290. 289. 288. 288. 287. 286. 284.
AFV=  268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
AFVR= 268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
HLHI=    0.    0.    0.    0.    0.    0.    0.  228.  456.  684.  912. 1140.
      1368. 1596. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829.


JYR=76 IHO= 3 JDAY= 84
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  3.5  3.9  4.3  4.6  3.5  3.7  1.8  1.6  2.3  3.2  6.4  6.5  7.0  7.7  7.3  7.4  8.5  6.5  6.9  5.3  5.5  6.7  5.1
TEMP= 279. 278. 277. 276. 276. 275. 275. 275. 278. 284. 287. 290. 291. 291. 293. 293. 293. 293. 291. 291. 291. 289. 286. 285.
AFV=   61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
AFVR=  61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  23.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0. 1249. 2498. 3747. 4996. 6245.
      7494. 8743. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999.


JYR=76 IHO= 4 JDAY= 94
ISTAR=  4    4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  1.8  1.3  0.9  1.6  1.6  1.6  0.6  0.4  0.9  1.5  2.2  2.3  4.2  5.3  5.6  5.1  5.6  4.9  5.1  5.9  6.6  5.9  7.6  5.9
TEMP= 281. 280. 279. 278. 277. 277. 276. 277. 280. 284. 289. 292. 295. 296. 298. 298. 298. 298. 297. 295. 293. 292. 291. 290.
AFV=   52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
AFVR=  52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
HLHI=  400.  400.  400.  400.  400.  400.  400.  537.  674.  811.  948. 1085.
```

JYR=76 IHO= 4 JDAY=101
ISTAR= 4 4 4 4 4 4 4 4 2 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 4.5 4.1 5.1 4.1 3.9 3.5 3.3 3.0 2.5 2.4 2.3 2.5 2.1 2.8 3.0 3.3 3.4 3.6 3.7 3.7 3.8 3.8 3.0 4.1
TEMP= 279. 277. 276. 276. 275. 274. 274. 275. 279. 283. 286. 287. 289. 290. 291. 293. 293. 293. 293. 291. 288. 286. 284. 283.
AFV= 186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292. 5. 3. 7. 5. 8. 4. 10. 36. 43. 48. 70. 71. 55.
AFVR= 186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292. 5. 3. 7. 5. 8. 4. 10. 36. 43. 48. 70. 71. 55.
HLH1= 0. 0. 0. 0. 0. 0. 0. 186. 372. 558. 744. 930.
1116. 1302. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493.

JYR=76 IHO= 4 JDAY=105
ISTAR= 4 4 4 4 4 4 4 2 4 2 1 1 1 1 1 2 1 1 2 4 4 4 4 4 4
AWS= 2.6 1.8 1.5 1.8 1.3 1.3 0.7 1.2 0.8 1.1 2.0 2.9 3.6 3.9 2.5 3.6 3.3 3.3 3.9 4.8 5.4 5.3 3.7 3.5
TEMP= 283. 283. 282. 280. 280. 280. 280. 281. 284. 288. 292. 295. 296. 297. 298. 299. 299. 298. 297. 295. 294. 293. 292. 291.
AFV= 124. 176. 214. 205. 60. 55. 43. 220. 211. 320. 7. 2. 2. 8. 10. 11. 8. 49. 58. 56. 72. 68. 74. 54.
AFVR= 124. 176. 214. 205. 60. 55. 43. 220. 211. 320. 7. 2. 2. 8. 10. 11. 8. 49. 58. 56. 72. 68. 74. 54.
HLH1= 0. 0. 0. 0. 0. 0. 0. 266. 532. 798. 1064. 1330.
1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.

JYR=76 IHO= 4 JDAY=107
ISTAR= 4 4 4 4 4 4 4 4 1 1 1 1 1 1 1 1 1 3 3 4 4 4 4 4 4
AWS= 3.4 3.6 3.6 2.5 1.2 0.8 0.6 2.2 2.3 2.4 3.8 6.1 6.4 5.5 4.1 4.3 4.0 2.8 3.6 4.2 3.3 3.3 4.0 4.3
TEMP= 288. 287. 286. 286. 286. 285. 285. 286. 289. 293. 295. 297. 298. 298. 299. 299. 298. 298. 297. 295. 293. 292. 291. 289.
AFV= 53. 62. 54. 40. 11. 332. 2. 87. 80. 64. 54. 16. 46. 11. 12. 14. 32. 53. 60. 43. 40. 49. 35. 32.
AFVR= 58. 62. 54. 40. 11. 332. 2. 87. 80. 64. 54. 16. 46. 11. 12. 14. 32. 53. 60. 43. 40. 49. 35. 32.
HLH1= 244. 244. 244. 244. 244. 244. 244. 491. 738. 985. 1232. 1479.
1726. 1973. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225.

JYR=76 IHO= 4 JDAY=117
ISTAR= 3 3 3 3 3 3 3 3 3 2 2 1 1 1 1 1 1 1 1 4 4 4 4 4 4
AWS= 5.6 6.3 4.3 4.8 5.1 5.2 4.8 5.1 4.2 4.3 3.7 4.2 5.7 6.4 5.9 4.6 5.1 5.9 4.3 4.2 4.5 1.9 1.7 2.3
TEMP= 282. 281. 281. 280. 280. 279. 278. 279. 279. 279. 279. 280. 281. 282. 283. 284. 285. 285. 284. 283. 282. 280. 279. 278.
AFV= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
AFVR= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
HLH1= 457. 457. 457. 457. 457. 457. 457. 590. 723. 856. 989. 1122.
1255. 1388. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.

JYR=76 IHO= 4 JDAY=118
ISTAR= 4 4 4 4 4 4 4 3 1 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 2.3 2.7 3.6 3.4 4.3 5.2 4.3 2.5 2.1 2.4 5.0 5.1 3.8 4.4 5.4 5.4 6.3 7.3 6.1 6.3 5.7 5.8 4.7 3.5
TEMP= 277. 277. 276. 276. 275. 275. 275. 277. 280. 282. 284. 286. 287. 288. 289. 290. 290. 289. 288. 287. 286. 285. 283. 283.
AFV= 225. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
AFVR= 226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
HLH1= 914. 914. 914. 914. 914. 914. 914. 952. 990. 1028. 1066. 1104.
1142. 1180. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219.

JYR=76 IHO= 5 JDAY=126
ISTAR= 4 4 4 4 4 4 4 4 2 1 1 1 1 1 1 1 1 3 4 4 4 4 4 4
AWS= 2.0 1.2 1.2 1.5 1.3 0.9 0.4 0.9 1.1 2.9 3.7 4.8 4.3 5.2 5.1 4.6 5.3 4.8 5.6 6.3 6.4 5.8 4.1 4.4
TEMP= 280. 279. 279. 278. 278. 278. 278. 280. 284. 287. 290. 292. 294. 295. 296. 297. 297. 296. 296. 294. 293. 290. 289. 290.
AFV= 42. 67. 40. 37. 49. 125. 177. 76. 11. 43. 55. 28. 55. 55. 58. 59. 57. 55. 51. 53. 45. 12. 11. 18.
AFVR= 42. 67. 40. 37. 49. 125. 177. 76. 11. 43. 55. 28. 55. 55. 58. 59. 57. 55. 51. 53. 45. 12. 11. 18.
HLH1= 0. 0. 0. 0. 0. 0. 0. 156. 312. 468. 624. 780.
936. 1092. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.

```
JYR=76 IMO= 5 JDAY=128
ISTAB=  4    4    4    4    4    4    4    4    3    2    2    1    1    1    1    1    1    1    3    3    4    3    3    3
AWS=  1.9  2.7  3.3  4.0  4.1  3.8  3.3  2.3  2.9  1.5  3.2  3.3  3.9  5.9  5.6  5.9  6.4  7.2  7.2  7.8  8.4  6.4  5.4  2.8
TEMP= 290. 290. 290. 290. 290. 290. 290. 290. 291. 291. 292. 292. 293. 292. 292. 291. 289. 287. 286. 285. 285. 284. 284. 284.
AFV=   65.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
AFVR=  66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
HLH1=  762.  762.  762.  762.  762.  762.  762.  800.  838.  876.  914.  952.
       990. 1028. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067.


JYR=76 IMO= 5 JDAY=140
ISTAB=  4    4    4    4    4    4    4    2    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.4  1.9  2.4  3.2  1.6  2.1  2.8  0.5  0.8  1.3  1.7  1.7  3.7  3.3  3.7  3.7  3.8  3.5  4.7  4.2  4.9  4.7  4.1  2.8
TEMP= 281. 280. 279. 279. 279. 278. 278. 281. 284. 287. 289. 290. 291. 292. 293. 294. 294. 294. 293. 292. 290. 288. 286. 285.
AFV=  177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
AFVR= 177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
HLH1=   40.   40.   40.   40.   40.   40.   40.  225.  410.  595.  780.  965.
      1150. 1335. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527.


JYR=76 IMO= 5 JDAY=141
ISTAB=  4    4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  2.1  1.9  1.9  0.9  1.2  1.2  0.7  0.9  1.3  2.6  3.1  3.0  2.9  3.1  2.3  3.1  3.1  3.2  4.4  4.7  3.6  2.3  2.7
TEMP= 283. 283. 282. 281. 280. 280. 280. 280. 282. 286. 289. 292. 293. 294. 295. 296. 297. 297. 297. 297. 295. 292. 290. 289. 288.
AFV=  106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
AFVR= 106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
HLH1=    0.    0.    0.    0.    0.    0.    0.  190.  380.  570.  760.  950.
      1140. 1330. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 5 JDAY=142
ISTAB=  4    4    4    4    4    4    4    4    2    2    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS=  2.5  2.2  2.6  2.5  1.6  0.7  0.5  0.8  0.8  1.1  2.2  2.0  2.7  2.9  2.5  2.9  2.2  3.0  2.5  2.8  4.8  3.3  3.3  3.8
TEMP= 286. 286. 285. 285. 284. 283. 283. 285. 288. 291. 294. 296. 297. 298. 298. 299. 299. 299. 298. 297. 294. 293. 291. 290.
AFV=   84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
AFVR=  84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
HLH1=    0.    0.    0.    0.    0.    0.    0.  171.  342.  513.  684.  855.
      1026. 1197. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372.

YEAR BASED ON  20. DAYS
```

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 2.1706E-04 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE	0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1		1.37114E-04	1.24518E-04	1.07815E-04	8.71881E-05	7.62354E-05
2		1.20605E-04	1.05708E-04	9.29270E-05	8.16140E-05	7.37633E-05
3		1.09785E-04	9.49367E-05	8.44659E-05	7.68522E-05	7.30040E-05
4		1.09240E-04	9.40298E-05	8.27300E-05	7.38349E-05	7.00051E-05
5		1.02485E-04	9.06647E-05	8.05138E-05	7.42931E-05	7.21635E-05
6		8.66185E-05	7.91468E-05	7.32468E-05	6.90152E-05	6.70363E-05
7		7.24074E-05	6.93237E-05	6.72725E-05	6.59945E-05	6.54361E-05
8		6.64538E-05	6.57075E-05	6.52771E-05	6.51421E-05	6.56010E-05
9		6.51602E-05	6.50604E-05	6.50198E-05	6.50063E-05	6.50014E-05
10		6.50318E-05	6.50114E-05	6.52939E-05	6.61347E-05	6.61512E-05
11		6.52533E-05	6.50917E-05	6.50323E-05	6.50177E-05	6.50055E-05
12		6.67739E-05	6.57396E-05	6.53906E-05	6.61197E-05	6.65340E-05
13		7.36608E-05	6.89664E-05	6.72688E-05	6.87268E-05	6.85831E-05
14		9.52267E-05	8.02514E-05	7.23745E-05	7.11730E-05	7.06234E-05
15		1.36431E-04	1.06153E-04	8.84393E-05	8.01314E-05	7.47945E-05
16		1.67185E-04	1.29791E-04	1.20856E-04	1.18652E-04	1.01639E-04
17		1.47800E-04	1.14670E-04	9.98142E-05	9.15879E-05	8.30936E-05
18		1.06855E-04	8.79020E-05	7.85412E-05	7.23678E-05	6.88837E-05
19		7.95947E-05	7.28156E-05	6.95918E-05	6.72568E-05	6.61397E-05
20		6.86395E-05	6.71465E-05	6.64604E-05	6.57260E-05	6.53533E-05
21		6.56427E-05	6.54325E-05	6.53644E-05	6.58537E-05	6.61241E-05
22		6.50769E-05	6.50561E-05	6.50365E-05	6.50149E-05	6.50049E-05
23		6.50059E-05	6.50063E-05	6.50132E-05	6.50067E-05	6.50016E-05
24		6.50015E-05	6.50299E-05	6.52570E-05	6.52593E-05	6.51263E-05
25		6.50054E-05	6.50749E-05	6.57361E-05	6.59060E-05	6.55603E-05
26		6.50290E-05	6.50702E-05	6.52954E-05	6.52761E-05	6.51323E-05
27		6.51318E-05	6.52326E-05	6.52805E-05	6.51542E-05	6.50697E-05
28		6.53340E-05	6.56535E-05	6.58656E-05	6.55465E-05	6.52942E-05
29		6.54555E-05	6.59249E-05	6.62771E-05	6.58444E-05	6.54787E-05
30		6.53355E-05	6.56540E-05	6.58657E-05	6.55465E-05	6.52942E-05
31		6.51584E-05	6.52428E-05	6.52732E-05	6.51488E-05	6.50684E-05
32		6.52930E-05	6.51938E-05	6.50980E-05	6.50319E-05	6.50099E-05
33		6.65916E-05	6.60764E-05	6.55159E-05	6.51631E-05	6.50530E-05
34		7.16355E-05	7.00429E-05	6.80081E-05	6.61911E-05	6.54438E-05
35		8.59466E-05	8.23584E-05	7.63280E-05	6.99987E-05	6.73141E-05
36		2.17062E-04	2.00079E-04	1.60048E-04	1.12388E-04	8.81652E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 4.4502E-04 DIRECTION=360. DISTANCE= 0.7 KM DAY=319.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	2.7416E-04 (298)	1.9263E-04 (308)	1.8046E-04 (356)	1.3570E-04 (356)	1.1233E-04 (355)
2	3.3036E-04 (298)	2.0491E-04 (298)	1.3523E-04 (308)	1.3250E-04 (292)	1.1263E-04 (292)
3	2.9129E-04 (298)	1.9503E-04 (298)	1.4448E-04 (298)	1.1538E-04 (298)	9.5650E-05 (185)
4	3.1411E-04 (292)	2.2849E-04 (292)	1.6337E-04 (340)	1.1605E-04 (340)	9.1581E-05 (340)
5	3.7346E-04 (340)	2.8391E-04 (340)	2.0381E-04 (340)	1.5186E-04 (340)	1.1750E-04 (340)
6	2.8542E-04 (340)	2.0892E-04 (340)	1.3917E-04 (340)	9.6114E-05 (340)	7.9919E-05 (340)
7	1.4979E-04 (340)	1.1227E-04 (340)	8.5223E-05 (340)	7.2356E-05 (340)	6.8251E-05 (321)
8	8.2828E-05 (340)	7.3180E-05 (340)	6.7832E-05 (340)	6.6427E-05 (321)	7.6552E-05 (321)
9	6.7030E-05 (340)	6.5718E-05 (340)	6.5186E-05 (340)	6.5050E-05 (331)	6.5009E-05 (340)
10	6.5407E-05 (342)	6.5124E-05 (342)	7.0839E-05 (331)	8.7686E-05 (331)	8.8022E-05 (331)
11	6.8931E-05 (342)	6.6542E-05 (342)	6.5520E-05 (342)	6.5260E-05 (342)	6.5092E-05 (342)
12	8.6952E-05 (342)	7.5373E-05 (342)	7.0290E-05 (342)	7.9828E-05 (331)	9.0343E-05 (331)
13	1.4085E-04 (342)	1.0545E-04 (342)	8.6190E-05 (342)	1.0862E-04 (331)	1.1131E-04 (331)
14	2.4043E-04 (342)	1.6526E-04 (342)	1.1157E-04 (342)	1.1025E-04 (331)	1.1424E-04 (331)
15	3.5346E-04 (342)	2.4018E-04 (342)	1.7897E-04 (222)	1.8139E-04 (222)	1.4174E-04 (222)
16	4.2553E-04 (222)	3.0077E-04 (331)	2.7496E-04 (241)	3.8976E-04 (241)	3.0081E-04 (241)
17	3.5886E-04 (332)	2.5796E-04 (332)	2.0341E-04 (231)	1.9971E-04 (231)	1.5100E-04 (231)
18	2.9353E-04 (332)	2.1105E-04 (332)	1.4330E-04 (332)	1.0199E-04 (231)	8.9059E-05 (231)
19	1.8625E-04 (332)	1.4421E-04 (332)	1.1050E-04 (332)	8.5976E-05 (332)	7.6012E-05 (332)
20	1.0869E-04 (332)	9.5841E-05 (332)	8.5101E-05 (332)	7.4714E-05 (332)	6.9970E-05 (332)
21	7.4934E-05 (332)	7.2494E-05 (332)	7.0073E-05 (332)	7.9317E-05 (331)	8.6295E-05 (331)
22	6.6384E-05 (332)	6.6057E-05 (332)	6.5656E-05 (332)	6.5244E-05 (332)	6.5086E-05 (332)
23	6.5116E-05 (332)	6.5082E-05 (332)	6.5220E-05 (315)	6.5122E-05 (315)	6.5029E-05 (315)
24	6.5025E-05 (315)	6.5595E-05 (315)	7.0138E-05 (315)	7.0186E-05 (315)	6.7526E-05 (315)
25	6.5109E-05 (315)	6.6499E-05 (315)	7.9722E-05 (315)	8.3119E-05 (315)	7.6205E-05 (315)
26	6.5580E-05 (315)	6.6403E-05 (315)	7.0907E-05 (315)	7.0521E-05 (315)	6.7645E-05 (315)
27	6.7636E-05 (315)	6.9651E-05 (315)	7.0610E-05 (315)	6.8083E-05 (315)	6.6393E-05 (315)
28	7.1679E-05 (315)	7.8070E-05 (315)	8.2312E-05 (315)	7.5929E-05 (315)	7.0883E-05 (315)
29	7.4109E-05 (315)	8.3498E-05 (315)	9.0541E-05 (315)	8.1889E-05 (315)	7.4575E-05 (315)
30	7.1679E-05 (315)	7.8069E-05 (315)	8.2311E-05 (315)	7.5929E-05 (315)	7.0883E-05 (315)
31	6.7633E-05 (315)	6.9609E-05 (315)	7.0390E-05 (315)	6.7961E-05 (315)	6.6364E-05 (315)
32	6.8070E-05 (17)	6.6536E-05 (17)	6.5778E-05 (315)	6.5337E-05 (315)	6.5120E-05 (315)
33	8.1327E-05 (17)	7.4704E-05 (17)	6.9843E-05 (355)	6.6677E-05 (355)	6.5607E-05 (355)
34	1.1624E-04 (17)	1.0007E-04 (17)	8.8428E-05 (17)	7.5373E-05 (17)	6.8699E-05 (17)
35	1.6563E-04 (17)	1.3580E-04 (17)	1.1956E-04 (17)	9.4206E-05 (17)	8.1081E-05 (17)
36	4.4502E-04 (319)	4.2638E-04 (315)	3.5470E-04 (356)	2.2572E-04 (356)	1.5008E-04 (356)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 1.8633E-03 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4. KM	8.7 KM
1	1.2346E-03 (321)	8.2412E-04 (321)	4.9045E-04 (315)	3.5280E-04 (355)	3.2654E-04 (355)
2	1.2422E-03 (298)	6.5498E-04 (298)	4.4739E-04 (308)	5.7381E-04 (292)	4.3431E-04 (292)
3	1.1214E-03 (298)	7.1846E-04 (298)	5.0357E-04 (298)	4.0398E-04 (298)	2.9908E-04 (185)
4	1.3233E-03 (292)	7.5916E-04 (292)	4.8792E-04 (292)	2.9082E-04 (340)	2.3482E-04 (284)
5	1.3023E-03 (340)	8.1095E-04 (340)	5.2651E-04 (340)	4.2475E-04 (340)	3.0764E-04 (340)
6	9.7227E-04 (340)	5.9202E-04 (340)	3.0935E-04 (321)	2.5854E-04 (321)	1.7904E-04 (321)
7	4.2269E-04 (340)	2.5087E-04 (340)	1.4701E-04 (321)	1.1992E-04 (321)	9.0855E-05 (321)
8	1.4082E-04 (340)	9.7720E-05 (340)	7.5492E-05 (340)	7.6384E-05 (321)	1.5741E-04 (321)
9	7.3642E-05 (340)	6.7875E-05 (340)	6.5689E-05 (340)	6.5403E-05 (331)	6.5059E-05 (331)
10	6.8149E-05 (342)	6.5951E-05 (342)	1.1171E-04 (331)	2.4649E-04 (331)	2.4917E-04 (331)
11	9.4198E-05 (342)	7.6304E-05 (342)	6.8316E-05 (342)	6.6218E-05 (342)	6.5454E-05 (342)
12	2.1702E-04 (342)	1.3494E-04 (342)	8.9940E-05 (342)	1.8341E-04 (331)	2.6771E-04 (331)
13	5.2664E-04 (342)	2.9964E-04 (342)	1.5865E-04 (342)	4.0877E-04 (331)	4.3410E-04 (331)
14	9.2833E-04 (342)	5.2198E-04 (342)	2.5557E-04 (342)	3.8416E-04 (331)	4.4396E-04 (331)
15	1.1205E-03 (342)	6.6624E-04 (241)	4.2969E-04 (222)	4.7741E-04 (222)	3.0221E-04 (222)
16	1.3184E-03 (331)	7.8551E-04 (342)	5.9351E-04 (222)	6.9981E-04 (241)	5.8110E-04 (241)
17	1.1778E-03 (218)	7.5331E-04 (332)	5.2620E-04 (231)	6.9268E-04 (231)	5.2161E-04 (342)
18	9.1895E-04 (332)	5.3661E-04 (332)	3.1788E-04 (332)	2.7482E-04 (231)	2.1433E-04 (231)
19	5.2099E-04 (332)	3.8401E-04 (332)	3.0162E-04 (332)	1.9002E-04 (332)	1.3401E-04 (332)
20	2.3956E-04 (332)	2.2997E-04 (332)	1.9652E-04 (332)	1.3399E-04 (332)	1.0135E-04 (332)
21	1.1303E-04 (332)	1.1264E-04 (332)	1.0196E-04 (332)	1.7948E-04 (331)	2.3535E-04 (331)
22	7.2818E-05 (332)	7.2461E-05 (332)	7.0023E-05 (332)	6.6916E-05 (332)	6.5676E-05 (332)
23	6.5746E-05 (332)	6.5615E-05 (332)	6.6763E-05 (315)	6.5975E-05 (315)	6.5232E-05 (315)
24	6.5204E-05 (315)	6.9759E-05 (315)	1.0610E-04 (315)	1.0649E-04 (315)	8.5207E-05 (315)
25	6.5870E-05 (315)	7.6989E-05 (315)	1.8277E-04 (315)	2.0995E-04 (315)	1.5464E-04 (315)
26	6.9538E-05 (315)	7.6225E-05 (315)	1.1226E-04 (315)	1.0917E-04 (315)	8.6162E-05 (315)
27	8.6084E-05 (315)	1.0221E-04 (315)	1.0988E-04 (315)	8.9667E-05 (315)	7.6147E-05 (315)
28	1.1843E-04 (315)	1.6956E-04 (315)	2.0350E-04 (315)	1.5243E-04 (315)	1.1206E-04 (315)
29	1.3787E-04 (315)	2.1298E-04 (315)	2.6933E-04 (315)	2.0011E-04 (315)	1.4160E-04 (315)
30	1.1843E-04 (315)	1.6955E-04 (315)	2.0349E-04 (315)	1.5243E-04 (315)	1.1206E-04 (315)
31	8.6066E-05 (315)	1.0187E-04 (315)	1.0812E-04 (315)	8.8692E-05 (315)	7.5915E-05 (315)
32	8.9552E-05 (17)	7.7267E-05 (17)	7.1187E-05 (315)	6.7692E-05 (315)	6.5956E-05 (315)
33	1.9525E-04 (17)	1.4065E-04 (17)	9.7792E-05 (355)	7.6028E-05 (355)	6.9015E-05 (355)
34	4.7122E-04 (17)	3.1763E-04 (17)	2.3141E-04 (17)	1.4185E-04 (17)	9.2554E-05 (17)
35	8.4793E-04 (17)	5.5495E-04 (17)	4.3102E-04 (17)	2.7510E-04 (17)	1.8218E-04 (17)
36	1.8633E-03 (308)	1.3134E-03 (354)	1.0560E-03 (356)	6.7833E-04 (356)	4.0534E-04 (356)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
319	4.4502E-04	36	0.71
308	4.4067E-04	36	0.71
315	4.2638E-04	36	1.33
222	4.2553E-04	16	0.71
331	4.1645E-04	16	0.71
231	3.9253E-04	16	0.71
241	3.8976E-04	16	4.65
342	3.8000E-04	16	0.71
340	3.7346E-04	5	0.71
218	3.6591E-04	16	0.71
356	3.6064E-04	36	1.33
332	3.5886E-04	17	0.71
17	3.4282E-04	36	0.71
355	3.4146E-04	36	1.33
354	3.3453E-04	36	0.71
298	3.3036E-04	2	0.71
321	3.2893E-04	36	0.71
284	3.1524E-04	36	0.71
185	3.1503E-04	36	0.71
292	3.1411E-04	4	0.71

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TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

KINGSTON PLANT 1975

&NAM1
KSTL=4  IUR=1  ITAP,IPUN= 0 0
  IDATA,IMAX,ILOTS= 0 0 0
IOHGT= 2   WHGT= 91.0  NST= 1
NPOL= 2   JTAR= 1   INPUT= 2
NSEA= 1   ECONV=   0.3048006   SYTF= 1.0   FIV= 3.0   TAF= 0.60   BACKGR=     65.0

DAY--  1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1    1  1  1  1  1  1  1  1  1  1
       1  1  1  1  1  1
```

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 775.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL)

DIRECTION	RING#1	RING#2	RING#3	RING#4	RING#5
1	760.0	750.0	760.0	970.0	1300.0
2	760.0	750.0	1120.0	825.0	960.0
3	755.0	750.0	740.0	800.0	1000.0
4	750.0	750.0	740.0	1100.0	1100.0
5	750.0	750.0	740.0	900.0	1060.0
6	740.0	745.0	1020.0	1160.0	1000.0
7	780.0	780.0	920.0	1000.0	1100.0
8	820.0	920.0	880.0	1060.0	800.0
9	860.0	830.0	720.0	1000.0	960.0
10	890.0	740.0	720.0	800.0	920.0
11	920.0	720.0	760.0	960.0	1020.0
12	850.0	740.0	720.0	1070.0	1000.0
13	780.0	720.0	960.0	1060.0	1000.0
14	750.0	740.0	1150.0	1020.0	1080.0
15	740.0	900.0	1020.0	800.0	1020.0
16	730.0	800.0	1060.0	780.0	940.0
17	730.0	900.0	1020.0	1010.0	720.0
18	740.0	960.0	1020.0	1020.0	900.0
19	740.0	820.0	720.0	800.0	780.0
20	740.0	760.0	970.0	720.0	1040.0
21	730.0	720.0	980.0	720.0	750.0
22	760.0	780.0	920.0	800.0	980.0
23	760.0	860.0	1100.0	1040.0	1020.0
24	760.0	840.0	1100.0	950.0	760.0
25	760.0	760.0	820.0	1100.0	900.0
26	760.0	780.0	840.0	1140.0	740.0
27	760.0	800.0	1080.0	1140.0	800.0
28	760.0	900.0	1040.0	1100.0	1200.0
29	780.0	1060.0	890.0	900.0	1400.0
30	780.0	1160.0	1060.0	1060.0	1400.0
31	790.0	1080.0	1100.0	1100.0	1100.0
32	805.0	1120.0	1040.0	1040.0	1100.0
33	795.0	1140.0	1020.0	1020.0	1100.0
34	805.0	1010.0	1020.0	1000.0	1400.0
35	770.0	1020.0	830.0	1000.0	1500.0
36	755.0	760.0	800.0	1040.0	1600.0

STACK # 1--KINGSTON STACKS#1-4, NORMAL POWER LOAD-SRC TSP
STACK # 2--KINGSTON STACKS#5-9, NORMAL POWER LOAD-SRC TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NOM	3.70	0.00	76.20	4.27	10.90	416.00	156.09
2	NOM	5.40	0.00	91.44	5.03	10.50	414.00	208.65

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.07 1.08 1.24 1.13 1.07 1.04 0.91 0.74 0.83 0.88 0.93 1.07

YEAR BASED ON 365. DAYS

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 6.5237E-05 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	6.51413E-05	6.51288E-05	6.51010E-05	6.50629E-05	6.50388E-05
2	6.51481E-05	6.51229E-05	6.50878E-05	6.50609E-05	6.50422E-05
3	6.51609E-05	6.51334E-05	6.51027E-05	6.50787E-05	6.50561E-05
4	6.51639E-05	6.51357E-05	6.50964E-05	6.50674E-05	6.50484E-05
5	6.51367E-05	6.51123E-05	6.50875E-05	6.50606E-05	6.50445E-05
6	6.50881E-05	6.50701E-05	6.50504E-05	6.50390E-05	6.50313E-05
7	6.50515E-05	6.50418E-05	6.50317E-05	6.50235E-05	6.50185E-05
8	6.50366E-05	6.50298E-05	6.50235E-05	6.50207E-05	6.50159E-05
9	6.50337E-05	6.50249E-05	6.50170E-05	6.50144E-05	6.50108E-05
10	6.50354E-05	6.50259E-05	6.50181E-05	6.50156E-05	6.50121E-05
11	6.50355E-05	6.50257E-05	6.50178E-05	6.50153E-05	6.50113E-05
12	6.50370E-05	6.50270E-05	6.50219E-05	6.50230E-05	6.50187E-05
13	6.50450E-05	6.50320E-05	6.50254E-05	6.50240E-05	6.50171E-05
14	6.50652E-05	6.50471E-05	6.50366E-05	6.50330E-05	6.50238E-05
15	6.50951E-05	6.50699E-05	6.50560E-05	6.50509E-05	6.50349E-05
16	6.51173E-05	6.50927E-05	6.50993E-05	6.51027E-05	6.50702E-05
17	6.51031E-05	6.50801E-05	6.50645E-05	6.50569E-05	6.50414E-05
18	6.50644E-05	6.50494E-05	6.50364E-05	6.50262E-05	6.50176E-05
19	6.50353E-05	6.50275E-05	6.50196E-05	6.50138E-05	6.50104E-05
20	6.50260E-05	6.50241E-05	6.50180E-05	6.50112E-05	6.50080E-05
21	6.50304E-05	6.50334E-05	6.50288E-05	6.50214E-05	6.50155E-05
22	6.50372E-05	6.50437E-05	6.50403E-05	6.50318E-05	6.50262E-05
23	6.50372E-05	6.50466E-05	6.50456E-05	6.50351E-05	6.50293E-05
24	6.50296E-05	6.50394E-05	6.50410E-05	6.50321E-05	6.50269E-05
25	6.50215E-05	6.50291E-05	6.50317E-05	6.50275E-05	6.50224E-05
26	6.50178E-05	6.50229E-05	6.50217E-05	6.50146E-05	6.50107E-05
27	6.50179E-05	6.50233E-05	6.50232E-05	6.50176E-05	6.50160E-05
28	6.50179E-05	6.50239E-05	6.50235E-05	6.50167E-05	6.50130E-05
29	6.50151E-05	6.50203E-05	6.50191E-05	6.50132E-05	6.50108E-05
30	6.50114E-05	6.50161E-05	6.50176E-05	6.50127E-05	6.50099E-05
31	6.50090E-05	6.50118E-05	6.50145E-05	6.50121E-05	6.50097E-05
32	6.50114E-05	6.50118E-05	6.50102E-05	6.50072E-05	6.50056E-05
33	6.50238E-05	6.50253E-05	6.50208E-05	6.50137E-05	6.50102E-05
34	6.50471E-05	6.50537E-05	6.50474E-05	6.50295E-05	6.50198E-05
35	6.50728E-05	6.50810E-05	6.50700E-05	6.50468E-05	6.50341E-05
36	6.52368E-05	6.52342E-05	6.51879E-05	6.51148E-05	6.50679E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 6.8351E-05 DIRECTION=360. DISTANCE= 1.3 KM DAY=315.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	6.6713E-05 (298)	6.6149E-05 (315)	6.5869E-05 (284)	6.5605E-05 (262)	6.5362E-05 (341)
2	6.7150E-05 (298)	6.6510E-05 (326)	6.5985E-05 (326)	6.5676E-05 (37)	6.5736E-05 (234)
3	6.6908E-05 (293)	6.6226E-05 (276)	6.6066E-05 (255)	6.6523E-05 (262)	6.6070E-05 (234)
4	6.7121E-05 (292)	6.6419E-05 (292)	6.6031E-05 (260)	6.6112E-05 (260)	6.5645E-05 (260)
5	6.7309E-05 (340)	6.6670E-05 (340)	6.6035E-05 (340)	6.6224E-05 (139)	6.5755E-05 (139)
6	6.6697E-05 (330)	6.6070E-05 (340)	6.5762E-05 (187)	6.5529E-05 (238)	6.5478E-05 (238)
7	6.6179E-05 (330)	6.5722E-05 (306)	6.5558E-05 (174)	6.5623E-05 (174)	6.5395E-05 (174)
8	6.6401E-05 (306)	6.5952E-05 (322)	6.5679E-05 (140)	6.6211E-05 (140)	6.6168E-05 (140)
9	6.6616E-05 (295)	6.5797E-05 (322)	6.5523E-05 (243)	6.5498E-05 (174)	6.5432E-05 (140)
10	6.6614E-05 (295)	6.5889E-05 (280)	6.5760E-05 (1)	6.5688E-05 (1)	6.5558E-05 (140)
11	6.6459E-05 (295)	6.6534E-05 (280)	6.6068E-05 (280)	6.5668E-05 (280)	6.5472E-05 (280)
12	6.6349E-05 (295)	6.6238E-05 (280)	6.5899E-05 (280)	6.5918E-05 (280)	6.5771E-05 (280)
13	6.6520E-05 (307)	6.6118E-05 (307)	6.5748E-05 (287)	6.6155E-05 (287)	6.5834E-05 (287)
14	6.6744E-05 (307)	6.6194E-05 (307)	6.5925E-05 (167)	6.6090E-05 (167)	6.5897E-05 (192)
15	6.7099E-05 (342)	6.6277E-05 (342)	6.5915E-05 (222)	6.5867E-05 (167)	6.5762E-05 (193)
16	6.7724E-05 (331)	6.6928E-05 (331)	6.6947E-05 (241)	6.7479E-05 (241)	6.6609E-05 (241)
17	6.7288E-05 (332)	6.6748E-05 (359)	6.6325E-05 (359)	6.6620E-05 (204)	6.6077E-05 (204)
18	6.6784E-05 (332)	6.6157E-05 (332)	6.5647E-05 (252)	6.5619E-05 (252)	6.5436E-05 (252)
19	6.6062E-05 (338)	6.5768E-05 (360)	6.5406E-05 (252)	6.5499E-05 (333)	6.5362E-05 (333)
20	6.5883E-05 (338)	6.5643E-05 (360)	6.5399E-05 (193)	6.5241E-05 (193)	6.5178E-05 (119)
21	6.6034E-05 (152)	6.6215E-05 (30)	6.6033E-05 (30)	6.5643E-05 (30)	6.5388E-05 (29)
22	6.6565E-05 (152)	6.6051E-05 (152)	6.5820E-05 (30)	6.5717E-05 (30)	6.5705E-05 (282)
23	6.6293E-05 (152)	6.6035E-05 (314)	6.5796E-05 (317)	6.5644E-05 (282)	6.5908E-05 (282)
24	6.6202E-05 (302)	6.6440E-05 (302)	6.6009E-05 (302)	6.5660E-05 (302)	6.5502E-05 (363)
25	6.5965E-05 (302)	6.6077E-05 (302)	6.5673E-05 (302)	6.5751E-05 (363)	6.5935E-05 (208)
26	6.5780E-05 (317)	6.5689E-05 (317)	6.5465E-05 (317)	6.5260E-05 (317)	6.5214E-05 (21)
27	6.5765E-05 (314)	6.5686E-05 (314)	6.5561E-05 (350)	6.5406E-05 (317)	6.5493E-05 (349)
28	6.6034E-05 (314)	6.5966E-05 (314)	6.5685E-05 (312)	6.5451E-05 (312)	6.5242E-05 (25)
29	6.5758E-05 (314)	6.5683E-05 (314)	6.5472E-05 (334)	6.5385E-05 (175)	6.5286E-05 (349)
30	6.5503E-05 (33)	6.5562E-05 (33)	6.5488E-05 (297)	6.5267E-05 (297)	6.5194E-05 (304)
31	6.5578E-05 (179)	6.5500E-05 (33)	6.5474E-05 (285)	6.5310E-05 (285)	6.5342E-05 (349)
32	6.5639E-05 (179)	6.5435E-05 (179)	6.5235E-05 (334)	6.5158E-05 (139)	6.5208E-05 (304)
33	6.5548E-05 (179)	6.5448E-05 (48)	6.5436E-05 (107)	6.5340E-05 (107)	6.5265E-05 (16)
34	6.5719E-05 (42)	6.5680E-05 (297)	6.5788E-05 (16)	6.5549E-05 (16)	6.5354E-05 (16)
35	6.5986E-05 (269)	6.5792E-05 (269)	6.5657E-05 (16)	6.5412E-05 (31)	6.5464E-05 (22)
36	6.8270E-05 (319)	6.8351E-05 (315)	6.7149E-05 (315)	6.6048E-05 (356)	6.5561E-05 (116)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 3-HOUR CONC= 7.8886E-05 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	7.4159E-05 (321)	7.1008E-05 (262)	6.9574E-05 (341)	6.9137E-05 (341)	6.7891E-05 (341)
2	7.4963E-05 (293)	7.1803E-05 (326)	6.9356E-05 (341)	6.9855E-05 (341)	6.9815E-05 (234)
3	7.3631E-05 (255)	7.1209E-05 (276)	6.9533E-05 (294)	7.0934E-05 (294)	7.0115E-05 (234)
4	7.5349E-05 (292)	7.1197E-05 (6)	6.9207E-05 (260)	6.8862E-05 (260)	6.7438E-05 (161)
5	7.4864E-05 (325)	7.1062E-05 (275)	6.8856E-05 (301)	6.9267E-05 (139)	6.8387E-05 (141)
6	7.3333E-05 (320)	7.0358E-05 (320)	6.8458E-05 (187)	6.9223E-05 (238)	6.8822E-05 (238)
7	7.1860E-05 (253)	6.9383E-05 (322)	6.8572E-05 (207)	6.8179E-05 (209)	6.7219E-05 (209)
8	7.3302E-05 (295)	7.1204E-05 (322)	6.8315E-05 (180)	6.9816E-05 (214)	6.8272E-05 (140)
9	7.4322E-05 (295)	6.9915E-05 (322)	6.7643E-05 (322)	6.8639E-05 (174)	6.8216E-05 (174)
10	7.3425E-05 (295)	7.0105E-05 (236)	6.7850E-05 (306)	6.8509E-05 (1)	6.7884E-05 (1)
11	7.3996E-05 (301)	7.0646E-05 (280)	6.8692E-05 (280)	6.8499E-05 (330)	6.7543E-05 (267)
12	7.3116E-05 (301)	6.9862E-05 (280)	6.8269E-05 (280)	6.7962E-05 (217)	6.7998E-05 (280)
13	7.2257E-05 (291)	6.9805E-05 (291)	6.8326E-05 (295)	6.8749E-05 (192)	6.8795E-05 (192)
14	7.4324E-05 (290)	7.1138E-05 (290)	6.8758E-05 (251)	6.9869E-05 (251)	6.8274E-05 (251)
15	7.2565E-05 (309)	6.9999E-05 (217)	6.9840E-05 (240)	6.9742E-05 (217)	6.8584E-05 (193)
16	7.4334E-05 (331)	7.0449E-05 (256)	6.9521E-05 (230)	7.0637E-05 (283)	6.8767E-05 (283)
17	7.3117E-05 (190)	7.1553E-05 (359)	6.9855E-05 (359)	6.9575E-05 (231)	6.8519E-05 (342)
18	7.2942E-05 (353)	7.0496E-05 (281)	6.8822E-05 (281)	6.8167E-05 (252)	6.7616E-05 (20)
19	7.2586E-05 (338)	6.9738E-05 (338)	6.7565E-05 (281)	6.8672E-05 (333)	6.7748E-05 (333)
20	7.1903E-05 (338)	6.9197E-05 (338)	6.7746E-05 (280)	6.6592E-05 (347)	6.6316E-05 (358)
21	7.1456E-05 (333)	7.0752E-05 (333)	7.0303E-05 (30)	6.8027E-05 (29)	6.7713E-05 (29)
22	7.2311E-05 (152)	7.0598E-05 (206)	6.9406E-05 (232)	6.8279E-05 (282)	6.9372E-05 (282)
23	7.1648E-05 (343)	7.0626E-05 (314)	6.9479E-05 (232)	6.8667E-05 (282)	6.9549E-05 (282)
24	7.1264E-05 (302)	7.1209E-05 (302)	6.9321E-05 (302)	6.8372E-05 (127)	6.8760E-05 (283)
25	7.0464E-05 (302)	7.0088E-05 (302)	6.8092E-05 (302)	6.9096E-05 (363)	6.9017E-05 (363)
26	7.0206E-05 (317)	6.9313E-05 (317)	6.8009E-05 (265)	6.6501E-05 (349)	6.6710E-05 (21)
27	6.9761E-05 (314)	6.9128E-05 (314)	6.8906E-05 (350)	6.7231E-05 (350)	6.7619E-05 (349)
28	7.1493E-05 (314)	7.0843E-05 (314)	6.8868E-05 (312)	6.7469E-05 (312)	6.6823E-05 (232)
29	6.9761E-05 (314)	6.9276E-05 (334)	6.7924E-05 (334)	6.7203E-05 (125)	6.7285E-05 (349)
30	6.9024E-05 (33)	6.9419E-05 (33)	6.7869E-05 (285)	6.7012E-05 (46)	6.6551E-05 (304)
31	6.9210E-05 (179)	6.8973E-05 (33)	6.8788E-05 (285)	6.7476E-05 (285)	6.7737E-05 (349)
32	6.9910E-05 (179)	6.8103E-05 (179)	6.6838E-05 (334)	6.6264E-05 (139)	6.6661E-05 (304)
33	6.9364E-05 (179)	6.8585E-05 (48)	6.7768E-05 (107)	6.6585E-05 (334)	6.6530E-05 (311)
34	7.0583E-05 (48)	7.0075E-05 (48)	6.8865E-05 (16)	6.7378E-05 (16)	6.7325E-05 (289)
35	7.1989E-05 (269)	7.0528E-05 (269)	6.9118E-05 (16)	6.7285E-05 (168)	6.7915E-05 (289)
36	7.8886E-05 (308)	7.5324E-05 (319)	7.1910E-05 (356)	6.9370E-05 (183)	6.8202E-05 (186)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
315	6.8351E-05	36	1.33
319	6.8270E-05	36	0.71
308	6.7997E-05	36	0.71
331	6.7724E-05	16	0.71
356	6.7721E-05	36	1.33
222	6.7522E-05	16	0.71
241	6.7479E-05	16	4.65
284	6.7430E-05	36	0.71
359	6.7386E-05	36	1.33
340	6.7309E-05	5	0.71
342	6.7296E-05	16	0.71
332	6.7288E-05	17	0.71
231	6.7250E-05	16	0.71
354	6.7178E-05	36	0.71
218	6.7170E-05	16	0.71
298	6.7150E-05	2	0.71
292	6.7121E-05	4	0.71
321	6.7036E-05	36	0.71
17	6.7029E-05	36	0.71
185	6.7017E-05	36	0.71

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT
SOLVENT REFINED COAL STUDY

STACK # 1--KINGSTON STACKS#1-4, MAX.LOAD SRC TSP

STACK	STRATEGY TYPE	SO2 EMISSION RATE (GMS/SEC)	PART EMISSION RATE (GMS/SEC)	HEIGHT (METERS)	DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	TEMP (DEG.K)	VOLUMETRIC FLOW (M**3/SEC)
1	NON	5.20	0.00	76.20	4.27	14.26	427.40	204.20

RANGE(KM)= 0.71 1.33 2.49 4.65 8.69
SEASONAL VARIATIONS BY CASE #
1 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

JYR=75 IHO= 6 JDAY=168
ISTAB= 4 4 4 4 4 4 4 4 4 3 2 1 1 1 1 3 3 3 4 4 4 4 4 4 4
AWS= 2.9 1.2 1.3 2.5 0.9 1.7 1.5 1.1 0.8 1.6 3.0 4.0 4.4 5.9 7.0 6.9 7.1 7.3 7.2 6.6 5.6 5.9 5.9 4.7
TEMP= 292. 292. 291. 291. 290. 290. 290. 290. 292. 294. 296. 298. 300. 301. 302. 302. 303. 303. 303. 302. 300. 299. 298. 296.
AFV= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 9. 30. 29. 30. 27. 25. 11. 26. 29. 51.
AFVR= 305. 295. 334. 323. 26. 238. 333. 4. 317. 358. 356. 350. 2. 0. 9. 30. 29. 30. 27. 25. 11. 26. 29. 51.
HLHI= 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2058. 1982. 1906. 1830. 1754.
1678. 1602. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.

JYR=75 IHO=12 JDAY=336
ISTAB= 4 4 4 4 4 4 4 4 4 4 1 1 1 1 1 1 2 3 4 4 4 4 4 4 4
AWS= 2.6 2.2 1.6 1.3 1.0 1.0 0.9 0.5 0.9 1.8 2.0 2.8 3.3 3.8 3.8 3.7 3.7 4.4 4.4 3.8 3.9 3.8 2.7 3.0
TEMP= 273. 272. 271. 271. 270. 270. 270. 269. 270. 272. 275. 278. 281. 282. 284. 284. 284. 283. 281. 279. 277. 277. 275. 275.
AFV= 208. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 8. 39. 38. 20. 15. 54. 60. 46. 53. 83.
AFVR= 208. 239. 259. 239. 129. 143. 16. 5. 59. 74. 2. 58. 2. 1. 8. 39. 38. 20. 15. 54. 60. 46. 53. 83.
HLHI= 305. 305. 305. 305. 305. 305. 305. 381. 457. 533. 609. 685.
761. 837. 914. 914. 914. 914. 914. 914. 914. 914. 914. 914.

JYR=76 IHO= 1 JDAY= 4
ISTAB= 3 3 4 3 3 4 4 4 3 1 1 1 1 1 1 1 3 4 4 4 4 4 4 4
AWS= 5.0 7.2 7.6 7.3 8.7 7.9 7.7 6.4 6.1 5.4 6.2 7.5 6.2 5.7 6.3 6.4 5.9 6.4 6.7 8.1 8.6 7.1 6.2 6.0
TEMP= 272. 271. 270. 270. 268. 267. 266. 266. 266. 266. 267. 267. 268. 269. 270. 270. 270. 269. 268. 267. 267. 266. 266. 265.
AFV= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
AFVR= 154. 162. 152. 143. 162. 150. 165. 168. 168. 169. 160. 173. 167. 162. 176. 178. 163. 163. 162. 162. 161. 163. 178. 179.
HLHI= 400. 400. 400. 400. 400. 400. 400. 438. 476. 514. 552. 590.
628. 666. 710. 710. 710. 710. 710. 710. 710. 710. 710. 710.

JYR=76 IHO= 1 JDAY= 8
ISTAB= 4 4 3 3 3 3 3 3 3 2 1 1 1 1 1 1 1 2 3 3 4 3 4 4 4
AWS= 7.2 8.0 10.6 11.0 10.3 11.2 10.7 8.2 9.6 9.3 9.2 9.0 6.6 6.9 6.8 7.5 7.2 7.7 5.8 5.9 5.8 6.8 6.1 5.1
TEMP= 276. 275. 274. 272. 271. 270. 269. 268. 268. 267. 267. 268. 267. 267. 267. 266. 266. 265. 264. 264. 264. 263. 262. 262.
AFV= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
AFVR= 147. 142. 153. 158. 167. 160. 164. 163. 163. 163. 161. 161. 165. 167. 164. 174. 164. 150. 163. 164. 151. 150. 150. 150.
HLHI= 853. 853. 853. 853. 853. 853. 853. 868. 883. 898. 913. 928.
943. 958. 975. 975. 975. 975. 975. 975. 975. 975. 975. 975.

JYR=76 IHO= 1 JDAY= 17
ISTAB= 3 3 3 3 3 3 3 3 3 1 1 1 1 1 1 1 3 4 4 4 4 4 4 4
AWS= 10.1 8.7 10.6 9.3 7.2 8.9 10.2 8.9 7.7 8.2 10.2 10.6 10.5 10.1 10.2 9.1 8.1 8.1 6.1 5.7 6.1 5.5 4.6 5.7

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AFV=  164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
AFVR= 164. 172. 174. 171. 164. 183. 178. 168. 162. 161. 174. 171. 166. 167. 163. 161. 162. 166. 168. 168. 170. 171. 185. 176.
HLHI= 400.  400.  400.  400.  400.  400.  400.  427.  454.  481.  508.  535.
      562.  589.  617.  617.  617.  617.  617.  617.  617.  617.  617.  617.


JYR=76 IMO= 1 JDAY= 27
ISTAR=  3    3    3    3    3    3    3    3    3    3    3    3    3    1    1    1    3    3    4    4    4    4    4    4
AWS=  6.4  5.2  6.4  7.2  7.6  8.0  8.1  8.9  8.8  8.4  8.1  7.5  8.2  7.5  9.1  6.7  8.0  7.2  5.7  3.9  2.8  2.3  4.2  6.3
TEMP= 275. 275. 275. 274. 274. 274. 274. 274. 274. 273. 273. 273. 273. 273. 273. 273. 273. 272. 272. 272. 272. 271. 271. 270. 270.
AFV=  170. 167. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
AFVR= 170. 162. 163. 165. 164. 165. 166. 164. 166. 165. 167. 169. 160. 164. 157. 163. 156. 176. 176. 170. 168. 165. 165. 170.
HLHI=  457.  457.  457.  457.  457.  457.  457.  521.  585.  649.  713.  777.
       841.  905.  975.  975.  975.  975.  975.  975.  975.  975.  975.  975.


JYR=76 IMO= 3 JDAY= 70
ISTAR=  4    4    4    4    4    4    4    4    3    3    3    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.1  4.3  4.1  3.5  3.6  4.4  3.3  2.7  1.4  0.9  1.7  2.4  2.6  2.6  2.5  4.0  4.4  3.8  3.9  3.8  1.2  1.0  0.5  0.7
TEMP= 276. 276. 275. 275. 274. 273. 273. 273. 274. 276. 278. 281. 283. 284. 285. 287. 287. 287. 286. 285. 283. 282. 280. 279.
AFV=  155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
AFVR= 155. 160. 160. 160. 155. 155. 155. 155. 130.  15.  16.  13.   3.   7.  13.   8.  17.  23.  41.  26.  55.  40.  45.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0.  266.  532.  798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IMO= 3 JDAY= 78
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    2    3    3    4    4    4    4    4    4
AWS=  1.5  2.7  3.3  2.5  2.0  2.7  3.2  3.9  3.2  4.8  4.4  4.5  5.0  6.3  6.0  6.3  6.9  5.6  5.9  6.7  6.8  6.8  5.1  4.8
TEMP= 273. 272. 271. 271. 271. 271. 271. 271. 273. 278. 282. 285. 288. 289. 291. 291. 291. 290. 289. 288. 288. 287. 286. 284.
AFV=  268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
AFVR= 268.  11.  74.  77.  53.  44.  53.  62.  53.  44.  48.  52.  43.  40.  43.  21.  27.  23.  30.  25.  35.  42.  42.  33.
HLHI=    0.    0.    0.    0.    0.    0.    0.  228.  456.  684.  912. 1140.
      1368. 1596. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829. 1829.


JYR=76 IMO= 3 JDAY= 84
ISTAR=  4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  3.5  3.9  4.3  4.6  3.5  3.7  1.8  1.6  2.3  3.2  6.4  6.5  7.0  7.7  7.3  7.4  8.5  6.5  6.9  5.3  5.5  6.7  5.1
TEMP= 279. 278. 277. 276. 276. 275. 275. 275. 278. 284. 287. 289. 291. 291. 293. 293. 293. 293. 291. 291. 291. 289. 286. 285.
AFV=   61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  21.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
AFVR=  61.  49.  51.  51.  48.  52.  53.  52.  42.   8.   4.  21.  16.  27.  24.  34.  35.  35.  37.  32.  23.  20.  53.  50.
HLHI=    0.    0.    0.    0.    0.    0.    0. 1249. 2498. 3747. 4996. 6245.
      7494. 8743. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999. 9999.


JYR=76 IMO= 4 JDAY= 94
ISTAR=  4    4    4    4    4    4    4    4    4    3    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  1.0  1.3  0.9  1.6  1.6  1.6  0.6  0.4  0.9  1.5  2.2  2.7  4.2  5.3  5.6  5.1  5.6  4.9  5.1  5.9  6.6  5.9  7.6  5.9
TEMP= 281. 280. 279. 278. 277. 277. 277. 276. 277. 280. 284. 289. 292. 295. 296. 298. 298. 298. 297. 295. 293. 292. 291. 290.
AFV=   52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
AFVR=  52.  35.  81.  56.  58.  64.  58. 226. 336.   4.   7.   7.   3.   5.  11.  49.  20.  27.  28.  54.  62.  46.  52.  51.
HLHI=  400.  400.  400.  400.  400.  400.  400.  537.  674.  811.  948. 1085.
      1222. 1359. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499. 1499.


JYR=76 IMO= 4 JDAY=101
ISTAR=  4    4    4    4    4    4    4    4    2    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  4.5  4.1  5.1  4.1  3.0  3.5  3.1  3.0  2.5  2.4  2.3  2.5  2.1  2.0  1.0  1.3  1.4  1.6  1.7  3.7  3.8  1.8  1.0  4.1
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AFV=  186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
AFVR= 186. 192. 219. 229. 231. 243. 243. 244. 244. 254. 292.   5.   3.   7.   5.   8.   4.  10.  36.  43.  48.  70.  71.  55.
HLHI= 0.   0.   0.   0.   0.   0.   0.   186. 372. 558. 744. 930.
      1116. 1302. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493. 1493.


JYR=76 IHO= 4 JDAY=105
ISTAR= 4   4   4   4   4   4   4   2   4   2   1   1   1   1   2   1   1   2   4   4   4   4   4   4
AWS=  2.6  1.8  1.5  1.9  1.3  1.3  0.7  1.2  0.8  1.1  2.0  2.9  3.6  3.9  2.5  3.6  3.3  3.3  3.8  4.8  5.4  5.3  3.7  3.5
TEMP= 283. 283. 282. 280. 280. 280. 280. 281. 284. 288. 292. 295. 296. 297. 298. 299. 299. 298. 297. 295. 294. 293. 292. 291.
AFV=  124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
AFVR= 124. 176. 214. 205.  60.  55.  43. 220. 211. 320.   7.   2.   2.   8.  10.  11.   8.  49.  58.  56.  72.  68.  74.  54.
HLHI= 0.   0.   0.   0.   0.   0.   0.   266. 532. 798. 1064. 1330.
      1596. 1862. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134. 2134.


JYR=76 IHO= 4 JDAY=107
ISTAR= 4   4   4   4   4   4   4   4   1   1   1   1   1   1   1   1   3   3   4   4   4   4   4   4
AWS=  3.4  3.6  3.6  2.5  1.2  0.8  0.6  2.2  2.3  2.4  3.9  6.1  6.4  5.5  4.1  4.3  4.0  2.8  3.6  4.2  3.3  3.3  4.0  4.3
TEMP= 288. 287. 286. 286. 286. 285. 285. 286. 289. 293. 295. 297. 298. 298. 299. 299. 298. 298. 297. 295. 293. 292. 291. 289.
AFV=   58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
AFVR=  58.  62.  54.  40.  11. 332.   2.  87.  80.  64.  54.  16.  46.  11.  12.  14.  32.  53.  60.  43.  40.  49.  35.  32.
HLHI=  244.  244.  244.  244.  244.  244.  244.  244.  491.  738.  985. 1232. 1479.
      1726. 1973. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225. 2225.


JYR=76 IHO= 4 JDAY=117
ISTAR= 3   3   3   3   3   3   3   3   3   2   2   1   1   1   1   1   1   1   4   4   4   4   4   4
AWS=  5.6  6.3  4.3  4.8  5.1  5.2  4.8  5.1  4.2  4.3  3.7  4.2  5.7  6.4  5.9  4.6  5.1  5.9  4.3  4.2  4.5  1.9  1.7  2.3
TEMP= 282. 281. 281. 280. 280. 279. 278. 279. 279. 279. 279. 280. 281. 282. 283. 284. 285. 285. 284. 283. 282. 280. 279. 278.
AFV=  103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
AFVR= 103. 137. 124. 137. 146. 146. 160. 159. 164. 166. 167. 170. 166. 162. 169. 167. 167. 162. 178. 212. 214. 237. 206. 213.
HLHI= 457.  457.  457.  457.  457.  457.  457.  590.  723.  856.  989. 1122.
      1255. 1388. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IHO= 4 JDAY=118
ISTAR= 4   4   4   4   4   4   4   3   1   1   1   1   1   1   1   1   1   3   4   4   4   4   4   4
AWS=  2.3  2.7  3.6  3.4  4.3  5.2  4.3  2.5  2.1  2.4  5.0  5.1  3.8  4.4  5.4  5.4  6.3  7.3  6.1  6.3  5.7  5.8  4.7  3.5
TEMP= 277. 277. 276. 276. 275. 275. 275. 277. 280. 282. 284. 286. 287. 288. 289. 290. 290. 289. 288. 287. 286. 285. 283. 283.
AFV=  226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
AFVR= 226. 193. 188. 202. 190. 173. 180. 174. 172. 199. 182. 158. 166. 172. 184. 165. 178. 175. 179. 170. 182. 182. 186. 185.
HLHI= 914.  914.  914.  914.  914.  914.  914.  952.  990. 1028. 1066. 1104.
      1142. 1180. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219. 1219.


JYR=76 IHO= 5 JDAY=126
ISTAR= 4   4   4   4   4   4   4   4   2   1   1   1   1   1   1   1   1   3   4   4   4   4   4   4
AWS=  2.0  1.2  1.2  1.5  1.3  0.9  0.4  0.9  1.1  2.9  3.7  4.8  4.3  5.2  5.1  4.6  5.3  4.8  5.6  6.3  6.4  5.8  4.1  4.4
TEMP= 280. 279. 279. 278. 278. 278. 278. 280. 284. 287. 290. 292. 294. 295. 296. 297. 297. 296. 296. 294. 293. 290. 289. 290.
AFV=   42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
AFVR=  42.  67.  40.  37.  49. 125. 177.  76.  11.  43.  55.  28.  55.  55.  58.  59.  57.  55.  51.  53.  45.  12.  11.  18.
HLHI=  0.   0.   0.   0.   0.   0.   0.   156. 312. 468. 624. 780.
      936. 1092. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250. 1250.


JYR=76 IHO= 5 JDAY=128
ISTAR= 4   4   4   4   4   4   4   4   3   2   2   1   1   1   1   1   1   1   3   3   4   3   3   3
AWS=  1.9  2.7  3.3  4.0  4.1  3.8  3.3  2.3  2.9  1.5  3.2  3.3  3.9  5.9  5.6  5.9  6.4  7.2  7.2  7.8  8.4  6.4  5.4  2.8
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AFV=   66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
AFVR=  66.  56.  70.  55.  71.  67. 144. 150. 140. 137. 170. 156. 167. 165. 145. 158. 165. 160. 169. 169. 175. 173. 177. 175.
HLH1=  762.  762.  762.  762.  762.  762.  762.  800.  838.  876.  914.  952.
       990. 1028. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067. 1067.


JYR=76 IMO= 5 JDAY=140
ISTAB=  4    4    4    4    4    4    4    2    3    1    1    1    1    1    1    1    1    3    4    4    4    4    4    4
AWS=  2.4  1.9  2.4  3.2  1.6  2.1  2.8  0.5  0.8  1.3  1.7  1.7  3.7  3.3  3.7  3.7  3.8  3.5  4.7  4.2  4.9  4.7  4.1  2.8
TEMP= 281. 280. 279. 279. 279. 278. 278. 281. 284. 287. 289. 290. 291. 292. 293. 294. 294. 294. 293. 292. 290. 288. 286. 285.
AFV=  177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
AFVR= 177. 145. 140. 180. 165. 148. 165. 243. 184.   0. 185.  11.   5.   7.   6.  54.  45. 171. 171. 152. 133. 138. 147. 135.
HLH1=   40.   40.   40.   40.   40.   40.   40.  225.  410.  595.  780.  965.
      1150. 1335. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527. 1527.


JYR=76 IMO= 5 JDAY=141
ISTAB=  4    4    4    4    4    4    4    4    3    2    1    1    1    1    1    1    3    3    4    4    4    4    4    4
AWS=  2.1  2.1  1.9  1.9  0.9  1.2  1.2  0.7  0.9  1.3  2.6  3.1  3.0  2.9  3.1  2.3  3.1  3.1  3.2  4.4  4.7  3.6  2.3  2.7
TEMP= 283. 283. 282. 281. 280. 280. 280. 282. 286. 289. 292. 293. 294. 295. 296. 297. 297. 297. 297. 295. 292. 290. 289. 288.
AFV=  106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
AFVR= 106. 194. 203. 189. 106.  15.  31. 218.   2.   7.   0.   7.   9.   3. 358.  14.  10.  13.  40.  42.  50.  79. 102.  65.
HLH1=    0.    0.    0.    0.    0.    0.    0.  190.  380.  570.  760.  950.
      1140. 1330. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524. 1524.


JYR=76 IMO= 5 JDAY=142
ISTAB=  4    4    4    4    4    4    4    4    2    2    1    1    1    1    1    1    3    4    4    4    4    4    4    4
AWS=  2.5  2.2  2.6  2.5  1.6  0.7  0.5  0.8  0.8  1.1  2.2  2.0  2.7  2.9  2.5  2.9  2.2  3.0  2.5  2.8  4.8  3.3  3.3  3.8
TEMP= 286. 286. 285. 285. 284. 283. 283. 285. 288. 291. 294. 296. 297. 298. 298. 299. 299. 299. 298. 297. 294. 293. 291. 290.
AFV=   84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
AFVR=  84.  86.  89. 114.  59.  97. 191. 171.   2.   3.   5.   3.   3.   3.   7.  10.  14.  31.  72.  70. 167. 170. 171. 177.
HLH1=    0.    0.    0.    0.    0.    0.    0.  171.  342.  513.  684.  855.
      1026. 1197. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372. 1372.

YEAR BASED ON  20. DAYS
```

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

MAXIMUM MEAN CONC= 6.5620E-05 DIRECTION= 36 DISTANCE= 0.7 KM

ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	6.52903E-05	6.52355E-05	6.51594E-05	6.50804E-05	6.50405E-05
2	6.52213E-05	6.51600E-05	6.51055E-05	6.50617E-05	6.50315E-05
3	6.51767E-05	6.51168E-05	6.50743E-05	6.50457E-05	6.50302E-05
4	6.51702E-05	6.51127E-05	6.50679E-05	6.50349E-05	6.50199E-05
5	6.51479E-05	6.50989E-05	6.50580E-05	6.50361E-05	6.50291E-05
6	6.50854E-05	6.50543E-05	6.50302E-05	6.50143E-05	6.50071E-05
7	6.50292E-05	6.50166E-05	6.50083E-05	6.50036E-05	6.50015E-05
8	6.50058E-05	6.50027E-05	6.50010E-05	6.50006E-05	6.50026E-05
9	6.50007E-05	6.50002E-05	6.50001E-05	6.50000E-05	6.50000E-05
10	6.50001E-05	6.50001E-05	6.50015E-05	6.50048E-05	6.50043E-05
11	6.50010E-05	6.50004E-05	6.50001E-05	6.50001E-05	6.50000E-05
12	6.50069E-05	6.50028E-05	6.50016E-05	6.50047E-05	6.50056E-05
13	6.50333E-05	6.50148E-05	6.50093E-05	6.50148E-05	6.50130E-05
14	6.51165E-05	6.50571E-05	6.50278E-05	6.50242E-05	6.50208E-05
15	6.52773E-05	6.51563E-05	6.50878E-05	6.50567E-05	6.50353E-05
16	6.53985E-05	6.52504E-05	6.52235E-05	6.52065E-05	6.51327E-05
17	6.53214E-05	6.51905E-05	6.51336E-05	6.51005E-05	6.50660E-05
18	6.51615E-05	6.50870E-05	6.50499E-05	6.50264E-05	6.50136E-05
19	6.50564E-05	6.50299E-05	6.50165E-05	6.50079E-05	6.50040E-05
20	6.50143E-05	6.50085E-05	6.50053E-05	6.50025E-05	6.50012E-05
21	6.50026E-05	6.50018E-05	6.50015E-05	6.50037E-05	6.50044E-05
22	6.50003E-05	6.50002E-05	6.50002E-05	6.50001E-05	6.50000E-05
23	6.50000E-05	6.50000E-05	6.50001E-05	6.50001E-05	6.50000E-05
24	6.50000E-05	6.50002E-05	6.50018E-05	6.50018E-05	6.50009E-05
25	6.50000E-05	6.50005E-05	6.50050E-05	6.50061E-05	6.50038E-05
26	6.50001E-05	6.50004E-05	6.50019E-05	6.50018E-05	6.50009E-05
27	6.50006E-05	6.50010E-05	6.50011E-05	6.50006E-05	6.50003E-05
28	6.50015E-05	6.50028E-05	6.50031E-05	6.50019E-05	6.50010E-05
29	6.50021E-05	6.50040E-05	6.50046E-05	6.50029E-05	6.50017E-05
30	6.50015E-05	6.50028E-05	6.50031E-05	6.50019E-05	6.50010E-05
31	6.50007E-05	6.50011E-05	6.50010E-05	6.50005E-05	6.50002E-05
32	6.50012E-05	6.50008E-05	6.50004E-05	6.50001E-05	6.50000E-05
33	6.50065E-05	6.50042E-05	6.50019E-05	6.50006E-05	6.50002E-05
34	6.50270E-05	6.50200E-05	6.50111E-05	6.50042E-05	6.50016E-05
35	6.50855E-05	6.50691E-05	6.50417E-05	6.50177E-05	6.50083E-05
36	6.56203E-05	6.55365E-05	6.53524E-05	6.51724E-05	6.50838E-05

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

YEARLY MAXIMUM 24-HOUR CONC= 6.6554E-05 DIRECTION=360. DISTANCE= 0.7 KM DAY=319.

HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR

DIR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	6.5799E-05 (298)	6.5499E-05 (315)	6.5432E-05 (356)	6.5252E-05 (356)	6.5176E-05 (355)
2	6.6014E-05 (298)	6.5518E-05 (298)	6.5265E-05 (308)	6.5267E-05 (292)	6.5176E-05 (292)
3	6.5873E-05 (298)	6.5490E-05 (298)	6.5303E-05 (298)	6.5188E-05 (298)	6.5116E-05 (185)
4	6.5977E-05 (292)	6.5627E-05 (292)	6.5420E-05 (340)	6.5240E-05 (340)	6.5129E-05 (340)
5	6.6218E-05 (340)	6.5845E-05 (340)	6.5534E-05 (340)	6.5338E-05 (340)	6.5196E-05 (340)
6	6.5968E-05 (340)	6.5548E-05 (340)	6.5266E-05 (340)	6.5109E-05 (340)	6.5052E-05 (340)
7	6.5332E-05 (340)	6.5178E-05 (340)	6.5072E-05 (340)	6.5026E-05 (321)	6.5011E-05 (321)
8	6.5070E-05 (340)	6.5031E-05 (340)	6.5010E-05 (340)	6.5007E-05 (321)	6.5050E-05 (321)
9	6.5009E-05 (340)	6.5003E-05 (340)	6.5001E-05 (340)	6.5000E-05 (331)	6.5000E-05 (331)
10	6.5002E-05 (342)	6.5000E-05 (342)	6.5030E-05 (331)	6.5095E-05 (331)	6.5085E-05 (331)
11	6.5015E-05 (342)	6.5006E-05 (342)	6.5002E-05 (342)	6.5001E-05 (342)	6.5000E-05 (342)
12	6.5085E-05 (342)	6.5039E-05 (342)	6.5021E-05 (342)	6.5066E-05 (331)	6.5094E-05 (331)
13	6.5294E-05 (342)	6.5152E-05 (342)	6.5081E-05 (342)	6.5183E-05 (331)	6.5171E-05 (331)
14	6.5681E-05 (342)	6.5377E-05 (342)	6.5168E-05 (342)	6.5190E-05 (331)	6.5182E-05 (331)
15	6.6124E-05 (342)	6.5661E-05 (342)	6.5468E-05 (222)	6.5452E-05 (222)	6.5281E-05 (222)
16	6.6395E-05 (222)	6.5916E-05 (331)	6.5938E-05 (241)	6.6288E-05 (241)	6.5861E-05 (241)
17	6.6160E-05 (332)	6.5736E-05 (332)	6.5565E-05 (231)	6.5511E-05 (231)	6.5307E-05 (231)
18	6.5899E-05 (332)	6.5558E-05 (332)	6.5286E-05 (332)	6.5140E-05 (231)	6.5086E-05 (231)
19	6.5478E-05 (332)	6.5307E-05 (332)	6.5165E-05 (332)	6.5073E-05 (332)	6.5038E-05 (332)
20	6.5174E-05 (332)	6.5123E-05 (332)	6.5074E-05 (332)	6.5034E-05 (332)	6.5017E-05 (332)
21	6.5040E-05 (332)	6.5031E-05 (332)	6.5019E-05 (332)	6.5065E-05 (331)	6.5083E-05 (331)
22	6.5006E-05 (332)	6.5004E-05 (332)	6.5002E-05 (332)	6.5001E-05 (332)	6.5000E-05 (332)
23	6.5000E-05 (332)	6.5000E-05 (332)	6.5001E-05 (315)	6.5001E-05 (315)	6.5000E-05 (315)
24	6.5000E-05 (315)	6.5004E-05 (315)	6.5035E-05 (315)	6.5035E-05 (315)	6.5017E-05 (315)
25	6.5001E-05 (315)	6.5010E-05 (315)	6.5100E-05 (315)	6.5123E-05 (315)	6.5076E-05 (315)
26	6.5003E-05 (315)	6.5007E-05 (315)	6.5038E-05 (315)	6.5036E-05 (315)	6.5018E-05 (315)
27	6.5012E-05 (315)	6.5020E-05 (315)	6.5021E-05 (315)	6.5011E-05 (315)	6.5005E-05 (315)
28	6.5030E-05 (315)	6.5056E-05 (315)	6.5062E-05 (315)	6.5038E-05 (315)	6.5020E-05 (315)
29	6.5041E-05 (315)	6.5079E-05 (315)	6.5091E-05 (315)	6.5059E-05 (315)	6.5033E-05 (315)
30	6.5030E-05 (315)	6.5056E-05 (315)	6.5062E-05 (315)	6.5038E-05 (315)	6.5020E-05 (315)
31	6.5012E-05 (315)	6.5020E-05 (315)	6.5019E-05 (315)	6.5010E-05 (315)	6.5005E-05 (315)
32	6.5012E-05 (17)	6.5006E-05 (17)	6.5003E-05 (315)	6.5001E-05 (315)	6.5000E-05 (315)
33	6.5065E-05 (17)	6.5037E-05 (17)	6.5018E-05 (355)	6.5006E-05 (355)	6.5002E-05 (355)
34	6.5202E-05 (17)	6.5137E-05 (17)	6.5088E-05 (17)	6.5037E-05 (17)	6.5013E-05 (17)
35	6.5396E-05 (17)	6.5277E-05 (17)	6.5207E-05 (17)	6.5105E-05 (17)	6.5062E-05 (17)
36	6.6554E-05 (319)	6.6479E-05 (315)	6.6058E-05 (356)	6.5562E-05 (356)	6.5296E-05 (356)

TENNESSEE VALLEY AUTHORITY - KINGSTON POWER PLANT

NOM--SO2

(EARLY MAXIMUM 3-HOUR CONC= 7.2001E-05 DIRECTION= 0. DISTANCE= 0.7 KM DAY=308. HOUR=1500.

HIGHEST 3-HOUR CONCENTRATION AT EACH RECEPTOR

)IR	RANGE 0.7 KM	1.3 KM	2.5 KM	4.7 KM	8.7 KM
1	6.9582E-05 (321)	6.7855E-05 (321)	6.6620E-05 (356)	6.6114E-05 (355)	6.6002E-05 (355)
2	6.9460E-05 (298)	6.7162E-05 (308)	6.6570E-05 (292)	6.7023E-05 (292)	6.6364E-05 (292)
3	6.9061E-05 (298)	6.7471E-05 (298)	6.6732E-05 (298)	6.6278E-05 (298)	6.5893E-05 (185)
4	6.9830E-05 (292)	6.7569E-05 (292)	6.6662E-05 (340)	6.6278E-05 (340)	6.5739E-05 (340)
5	6.9804E-05 (340)	6.7858E-05 (340)	6.6687E-05 (340)	6.6395E-05 (340)	6.5939E-05 (292)
6	6.8523E-05 (340)	6.6970E-05 (340)	6.5980E-05 (321)	6.5714E-05 (321)	6.5399E-05 (321)
7	6.6389E-05 (340)	6.5695E-05 (340)	6.5330E-05 (321)	6.5203E-05 (321)	6.5090E-05 (321)
8	6.5294E-05 (340)	6.5122E-05 (340)	6.5037E-05 (340)	6.5059E-05 (321)	6.5404E-05 (321)
9	6.5034E-05 (340)	6.5011E-05 (340)	6.5002E-05 (340)	6.5002E-05 (331)	6.5000E-05 (331)
10	6.5012E-05 (342)	6.5004E-05 (342)	6.5242E-05 (331)	6.5760E-05 (331)	6.5679E-05 (331)
11	6.5112E-05 (342)	6.5042E-05 (342)	6.5012E-05 (342)	6.5004E-05 (342)	6.5002E-05 (342)
12	6.5584E-05 (342)	6.5259E-05 (342)	6.5088E-05 (342)	6.5528E-05 (331)	6.5751E-05 (331)
13	6.6771E-05 (342)	6.5867E-05 (342)	6.5463E-05 (331)	6.6445E-05 (331)	6.6361E-05 (331)
14	6.8310E-05 (342)	6.6687E-05 (342)	6.5675E-05 (342)	6.6366E-05 (331)	6.6401E-05 (331)
15	6.9042E-05 (342)	6.7280E-05 (241)	6.6601E-05 (222)	6.6582E-05 (222)	6.5858E-05 (222)
16	6.9801E-05 (331)	6.7731E-05 (342)	6.7329E-05 (222)	6.7499E-05 (241)	6.6897E-05 (241)
17	6.9261E-05 (219)	6.7622E-05 (332)	6.7082E-05 (231)	6.7441E-05 (231)	6.6765E-05 (342)
18	6.8277E-05 (332)	6.6776E-05 (332)	6.5951E-05 (332)	6.5822E-05 (231)	6.5536E-05 (231)
19	6.6753E-05 (332)	6.6281E-05 (332)	6.5871E-05 (332)	6.5437E-05 (332)	6.5240E-05 (332)
20	6.5717E-05 (332)	6.5678E-05 (332)	6.5487E-05 (332)	6.5241E-05 (332)	6.5126E-05 (332)
21	6.5202E-05 (332)	6.5200E-05 (332)	6.5137E-05 (332)	6.5517E-05 (331)	6.5662E-05 (331)
22	6.5034E-05 (332)	6.5032E-05 (332)	6.5019E-05 (332)	6.5007E-05 (332)	6.5002E-05 (332)
23	6.5003E-05 (332)	6.5003E-05 (332)	6.5012E-05 (315)	6.5007E-05 (315)	6.5002E-05 (315)
24	6.5001E-05 (315)	6.5032E-05 (315)	6.5278E-05 (315)	6.5281E-05 (315)	6.5137E-05 (315)
25	6.5004E-05 (315)	6.5080E-05 (315)	6.5796E-05 (315)	6.5981E-05 (315)	6.5607E-05 (315)
26	6.5021E-05 (315)	6.5060E-05 (315)	6.5300E-05 (315)	6.5290E-05 (315)	6.5140E-05 (315)
27	6.5096E-05 (315)	6.5161E-05 (315)	6.5166E-05 (315)	6.5089E-05 (315)	6.5039E-05 (315)
28	6.5242E-05 (315)	6.5449E-05 (315)	6.5496E-05 (315)	6.5304E-05 (315)	6.5163E-05 (315)
29	6.5331E-05 (315)	6.5635E-05 (315)	6.5732E-05 (315)	6.5469E-05 (315)	6.5266E-05 (315)
30	6.5242E-05 (315)	6.5449E-05 (315)	6.5496E-05 (315)	6.5304E-05 (315)	6.5163E-05 (315)
31	6.5096E-05 (315)	6.5158E-05 (315)	6.5154E-05 (315)	6.5082E-05 (315)	6.5038E-05 (315)
32	6.5097E-05 (17)	6.5047E-05 (17)	6.5022E-05 (315)	6.5009E-05 (315)	6.5003E-05 (315)
33	6.5515E-05 (17)	6.5287E-05 (17)	6.5119E-05 (355)	6.5039E-05 (355)	6.5014E-05 (355)
34	6.6598E-05 (17)	6.5956E-05 (17)	6.5629E-05 (17)	6.5276E-05 (17)	6.5097E-05 (17)
35	6.8063E-05 (17)	6.6843E-05 (17)	6.6404E-05 (17)	6.5761E-05 (17)	6.5456E-05 (17)
36	7.2001E-05 (308)	6.9863E-05 (354)	6.8583E-05 (356)	6.7133E-05 (356)	6.6181E-05 (356)

MAXIMUM DAILY CONCENTRATIONS

DAY	24-HOUR CONCENTRATION	DIRECTION	DISTANCE
319	6.6554E-05	36	0.71
308	6.6482E-05	36	0.71
315	6.6479E-05	36	1.33
222	6.6395E-05	16	0.71
331	6.6375E-05	16	0.71
241	6.6288E-05	16	4.65
231	6.6255E-05	16	0.71
342	6.6233E-05	16	0.71
356	6.6227E-05	36	1.33
340	6.6218E-05	5	0.71
218	6.6178E-05	16	0.71
332	6.6160E-05	17	0.71
355	6.6173E-05	36	1.33
17	6.6115E-05	36	0.71
354	6.6100E-05	36	0.71
284	6.6035E-05	16	0.71
321	6.6026E-05	36	0.71
185	6.6023E-05	36	0.71
298	6.6014E-05	2	0.71
292	6.5977E-05	4	0.71

APPENDIX C

FLUE GAS SAMPLING DURING THE COMBUSTION OF SOLVENT REFINED COAL IN A UTILITY BOILER

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ABSTRACT

Solvent Refined Coal was burned in a commerical utility boiler. Flue gas samples were collected using EPA-5, ASME and Source Assessment Sampling System (SASS) trains and grab sampling methodologies. Results of available analyses are reported.

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FLUE GAS SAMPLING DURING THE COMBUSTION OF SOLVENT REFINED COAL IN A UTILITY BOILER

I. SUMMARY

On June 13th, 1977 Solvent Refined Coal (SRC) was burned in a commercial utility boiler for the first time, for the purpose of determining whether SRC could replace coal as a primary fuel in a pulverized coal-fired boiler. In addition to boiler efficiency tests, flue gas samples were collected using EPA-5, ASME, and Source Assessment Sampling System (SASS) trains.

In two previous phases of this program, coal was burned in the same boiler. Similar tests were performed; results were compared with the Phase III SRC test. The results of the comparison indicate that SRC can be used as a replacement for coal in a conventional pulverized coal-fired boiler. Results of the grab sample analysis indicated no detectable levels of C_1 - C_6 hydrocarbons. SO_2 emissions are approximately the same as those from low sulfur coal combustion. Higher concentrations of NO_x were probably attributable to high combustion temperature or higher organic nitrogen in the fuel, although emissions of NO_x were essentially the same as for coal.

II. INTRODUCTION

A combustion test at Georgia Power Company's Plant Mitchell, located near Albany, Georgia, was performed to determine whether SRC can be burned in a pulverized coal-fired boiler. This three-phase test marked the first time that SRC has been burned in a utility boiler. In addition to boiler and precipitator efficiency tests, a detailed inventory of air emissions, including polynuclear aromatic hydrocarbons, was performed.

In Phase I of this program, low sulfur Kentucky coal was burned in the existing, unmodified 22-1/2 MW pulverized coal boiler. Following replacement of the original burners with dual register burners and accompanying modifications, Phase II of the test was conducted. In this phase, as in Phase I, the boiler was fired with low sulfur Kentucky coal. In Phase III, discussed in detail in this report, following adjustment of the burners and the pulverizers, SRC was burned. This SRC had been produced at the Fort Lewis pilot plant from Western Kentucky coals having a sulfur content of approximately 4 per cent and an ash content of 10 to 12 per cent. Sulfur and ash in the SRC were nominally 0.6 and 0.1 per cent respectively. In each of the three phases of the program, the boiler was operated at full ($\sim$ 21 MW), medium ($\sim$ 14 MW), and low ($\sim$ 7 MW) load conditions.

Precipitator efficiency tests were run, ash resistivity was determined, and air emission levels were evaluated using EPA-5 and ASME trains. In addition to particulates, a number of gases, including CO_2, CO, NO_x, O_2, and SO_2 were monitored.

During Phases II and III, additional flue gas sampling was conducted using a SASS train to collect samples for modified EPA Level 1 laboratory analysis. Grab samples also were obtained for on-site analysis for C_1 - C_6 hydrocarbons, SO_2, N_2, CO, CO_2, and O_2.

A diagram of the SASS train is shown in Figure 1. This sampling device includes cyclones and a filter to collect particulates, a sorbent trap to collect C_7 - C_{16} hydrocarbons, impingers, and associated temperature controls, pumps, and meters. The sample is obtained from the flue gas duct by means of a probe inserted through the duct work and positioned to intersect the gas flow at a point having flow characteristics representative of the bulk flow.

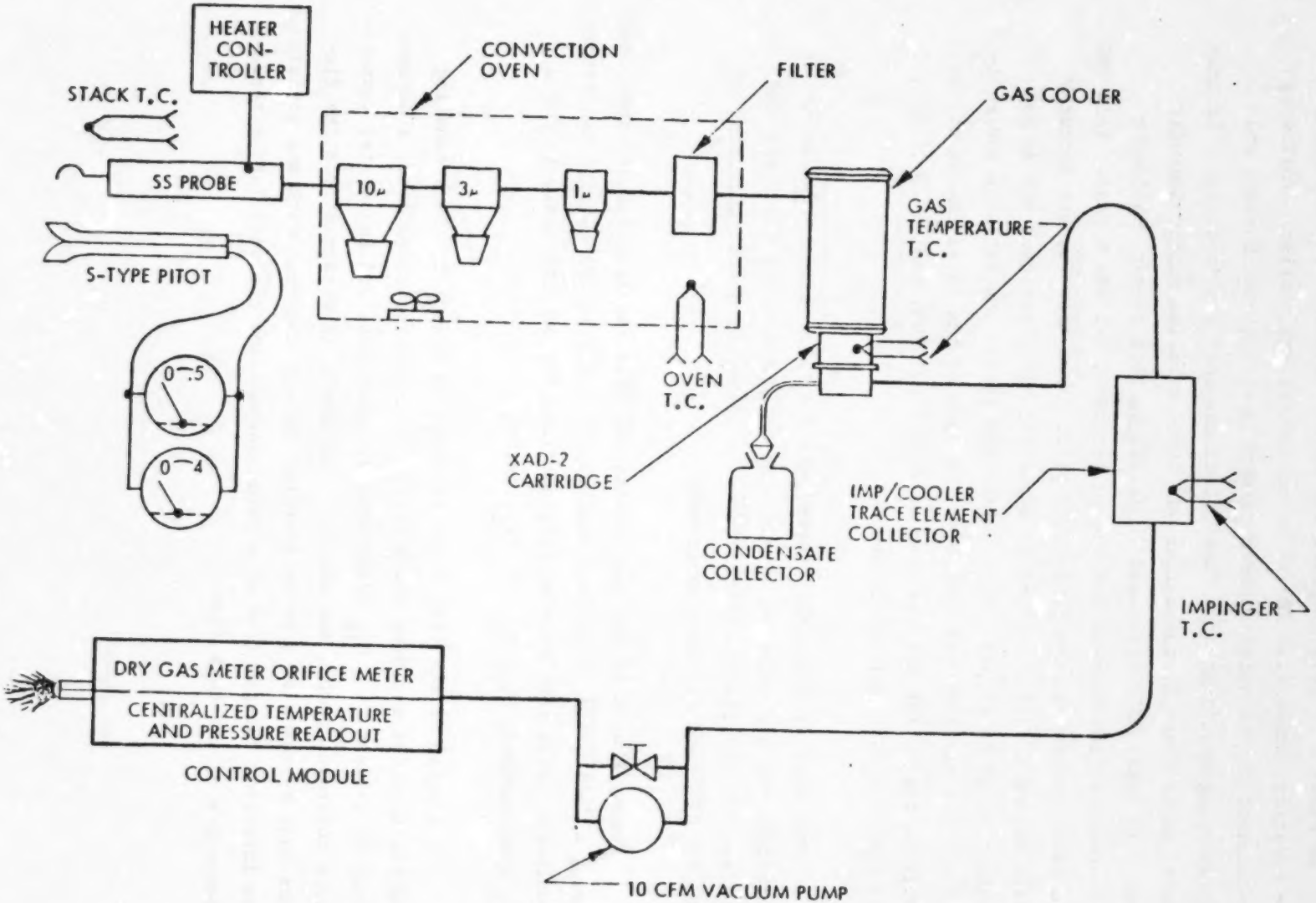

Figure 1. Source Assessment Sampling Schematic

Particulates are removed from the sample first, passing it through a series of cyclones. For the SRC tests, these cyclones were maintained at a temperature of 400°F. Particulates are collected in three size ranges, > 10 μ, 3 to 10 μ, and 1 to 3 μ, respectively. The cyclones are followed by a standard fiberglass filter, which collects a fourth size range, < 1μ .

Gas leaving the filter is cooled to approximately 68°F and passed through a cartridge containing XAD-2 resin. This resin absorbs a broad range of organic compounds. Condensate produced when the gas is cooled is collected in a condensate trap.

A series of three impingers follows the resin cartridge. The first contains hydrogen peroxide solution, which removes reducing components to prevent deterioration of the following impinger solutions. The second and third impingers, containing ammonium thiosulfate and silver nitrate, collect volatile inorganic trace elements.

Next, the gas passes through a dehydrating agent, to protect the pump which follows. Finally, the gas flow rate is metered, and the gas is vented.

Using the SASS train, each test run provided a total of nine samples, all of which included solids fractions, condensate, resin, impinger liquids, and rinses. After weighing, several of the initial samples were combined and for later analysis. Results will indicate the presence or absence of several classes of organic compounds as well as inorganic components and trace elements. In addition to the abbreviated Level 1 analysis, the samples will be analyzed to determine whether or not selected polynuclear aromatic compounds, having carcinogenic properties, were present.

Grab samples were collected using a Tedlar bag and a stainless steel probe. The samples were extracted from the stack by means of varistaltic pump, which can obtain leak-free samples over a long period of time. On-site analysis was performed (usually within thirty minutes of sampling) by injecting gases captured in the sample bag into a gas chromatograph. Parameters identified included C_1 - C_6 hydrocarbons, CO, SO_2, O_2, N_2, and CO_2.

Daily composites of the coal used during Phase II and the SRC used during Phase III were also prepared. Bottom ash samples were collected as well.

Participants in the SRC combustion tests included:

- Southern Company Services - co-sponsor and owner
- ERDA - co-sponsor and supplier of SRC
- Southern Research Institute (SRI) - SASS Train Sampling and Resistivity
- TRW - Grab sampling and on-site analysis for CO, CO_2, SO_2, N_2, O_2, and C_1 - C_6 hydrocarbons
- York Research - EPA-5 and ASME trains, gaseous emissions, precipitator efficiency
- Babcock & Wilcox - Boiler efficiency
- Rust Engineering (Subsidiary of Wheelabrator-Frye) with SRI - Resistivity

- Wheelabrator-Frye - modeling of precipitator for control of SRC combustion particulates

- Hittman Associates, Inc. - Development of sampling plan for the SASS train and grab samples, coordination of these efforts, and responsibility for subsequent sample analysis and interpretation

Figure 2 depicts the location of the precipitator and sampling ports. Boiler #1 was the test boiler. Load conditions (i.e. full, medium and low) were varied daily. During the first nine days of testing, samples were collected at the inlet and outlet of precipitator #1. Test ports A_1, A_2, B_1, and B_2 were used for this emission testing. ASME and EPA-5 trains were used simultaneously to collect samples both at inlet ports A_1 or A_2, and outlet ports B_1 or B_2. SASS train samples and grab samples for on-site analysis were collected either at inlet port A_1 or outlet port B_1. Point X indicates the location of the continuous sampler for monitoring gases such as SO_2 and NO_x.

Since precipitator #1 is a 1946 vintage Research Cottrell unit with perforated plates, Rust Engineering and Wheelabrator-Frye requested that two additional days of tests be performed on precipitator #3, a newer unit. Data gathered could be used in the future for modeling purposes. To facilitate these tests, boiler #2 and precipitators #1 and #2 were shut down. Samples were collected at ports C, D, E_1 and E_2. ASME and EPA-5 samples were simultaneously collected at ports C, E_1, and E_2. SASS train and grab samples for on-site analysis were collected at outlet port D.

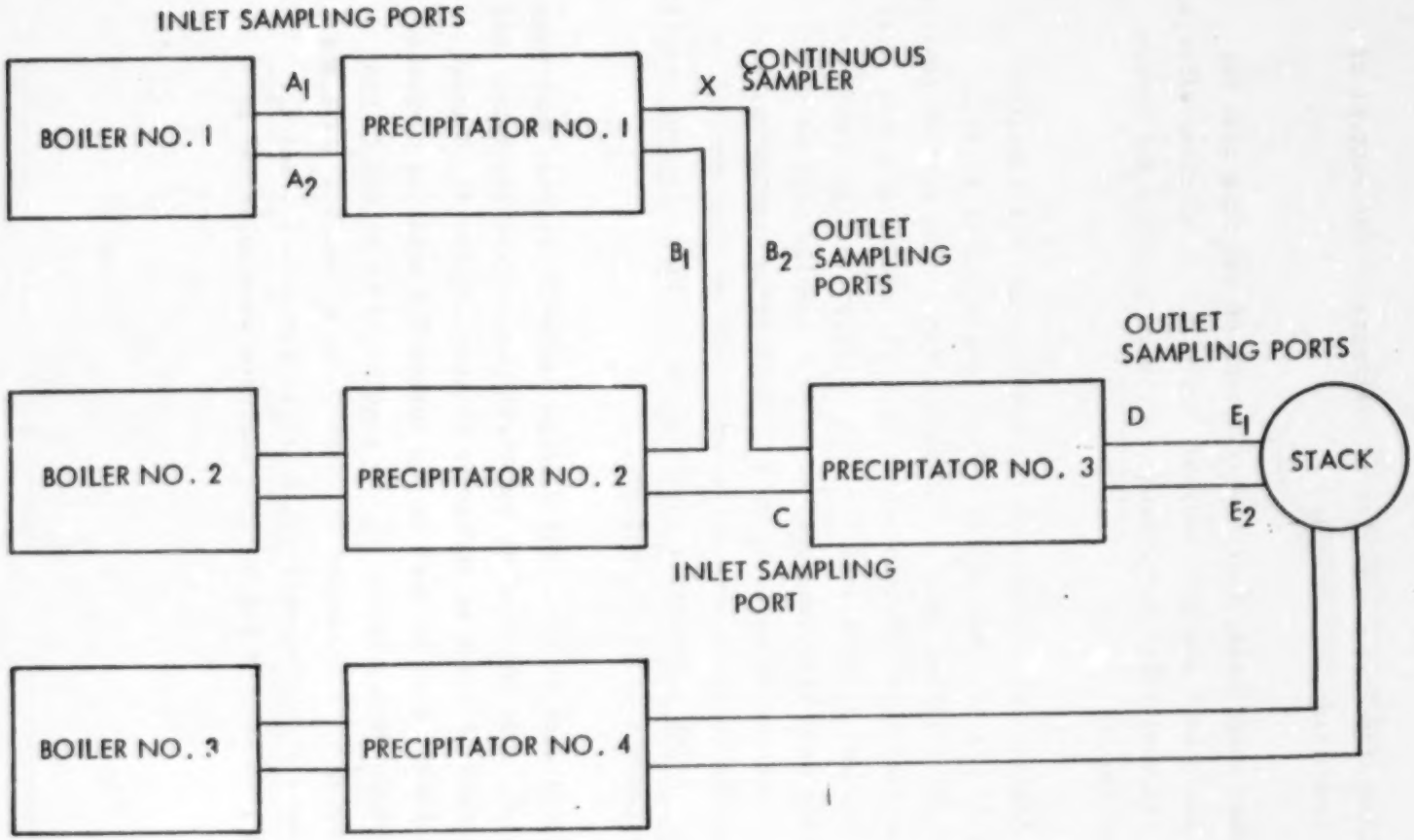

Figure 2. The Location of the Boilers, Precipitators and Sampling Ports at Plant Mitchell

III. Phases II & III Testing

In both Phase II, coal combustion, and Phase III, SRC combustion, the boiler was operated at full, medium and low load conditions. In addition, at the conclusion of Phase III, the boiler was operated "wide open", approximately 23.5 MW, for several days.

Because only one SASS train was available, it was impossible simultaneously to collect samples at both the inlet and outlet ports to the precipitator. During each phase the SASS train location was varied to permit sampling at both ports. During each SASS run, a grab sample for on-site analysis was collected at the same location. EPA-5 and ASME trains operated concurrently at both the inlet and outlet of the precipitator being tested and while the SASS train was in operation.

The schedules for Phases II and III were developed by Mr. Richard McRanie of Southern Company Services after consultation with participants. The load condition and test precipitator were designated for each day of testing. Tables 1 and 2 indicate these schedules as well as the sampling location for the SASS train.

During Phase II, which began May 24, 1977, low sulfur Kentucky coal was burned in the boiler. No significant operational problems were noted during this phase. The burners operated as expected and flue gas samples were collected. Phase II concluded on June 26, 1977, after eleven days of testing.

Combustion of SRC, Phase III, began on June 13th, 1977. Sampling continued through June 24, 1977. A few additional days of testing were scheduled starting June 25th; however SASS and grab samples were not collected because of the experiments being conducted. The schedule called for variation in load levels, air to SRC feed ratios, and precipitator rapping. Because of the short duration of these conditions, it was impossible to complete a SASS train run which typically is of five-hour duration.

TABLE 1. PHASE II - COAL COMBUSTION TEST SCHEDULE

DATE	LOAD CONDITION	SASS TRAIN SAMPLING LOCATION
May 24	Full	Outlet ESP #1
May 25	Medium	Outlet ESP #1
May 26	Low	Outlet ESP #1
May 27	Full	Outlet ESP #1
May 28	Full	Inlet ESP #1
May 29	Medium	Inlet ESP #1
May 30	Medium	Outlet ESP #1
May 31	Low	Outlet ESP #1
June 1	Low	Inlet ESP #1
June 5	Full	Outlet ESP #3
June 6	Full	Outlet ESP #3

TABLE 2. PHASE III - SRC COMBUSTION TEST SCHEDULE

DATE	LOAD CONDITION	SASS TRAIN SAMPLING LOCATION
June 13	Full	Outlet ESP #1
June 14	Medium	Outlet ESP #1
June 15	Low	Outlet ESP #1
June 16	Full	Outlet ESP #1
June 17	Full	Inlet ESP #1
June 18	Low	Inlet ESP #1
June 19	Low	Outlet ESP #1
June 20	Medium	Inlet ESP #1
June 21	Medium	Outlet ESP #1
June 22	Full	Outlet ESP #3
June 23	Full	Outlet ESP #3
June 24	"wide open"	Outlet ESP #1

IV. ANALYTICAL RESULTS

Results of the SASS train analyses are not available at this time. Figure 3 shows the planned analytical procedures. Samples from both Phase II (coal) and Phase III (SRC) runs will be analyzed. One coal and one SRC sample also will be tested for trace elements.

Results which are available at this time include the on-site analyses presented in Tables 3 and 4. Analyses of the coal and SRC, and calculated emissions are presented in Tables 5, 6, and 7.

The C_1 to C_6 hydrocarbons were determined by means of a flame ionization detector in a Perkin-Elmer gas chromatograph. During the first three days of Phase II, the test limits were 5 ppm due to improper grounding of the instrument. During the remainder of the tests, the detectable limit was 0.5 ppm. The O_2, N_2, CO and CO_2 and SO_2 levels were measured with a thermal conductivity detector in an A.I.D. portable gas chromatograph. The accuracy of this instrument is $\pm$ two percent of the reading taken.

NO_x and SO_2 were continuously monitored. A thermal electron NO_x analyzer was used to measure nitrogen oxides, and the theta sensor SO_2 monitor was used to measure sulfur oxides. The accuracy of these instruments is $\pm$ 10 ppm.

Results of the on-site analysis of grab samples are included in Section VI of this report. The following conclusions can be drawn about SRC combustion:

- When compared on a pounds of SO_2 per million Btu basis, SRC flue gas shows only approximately 67 percent as much SO_2 discharge as does coal flue gas, during the course of this test.

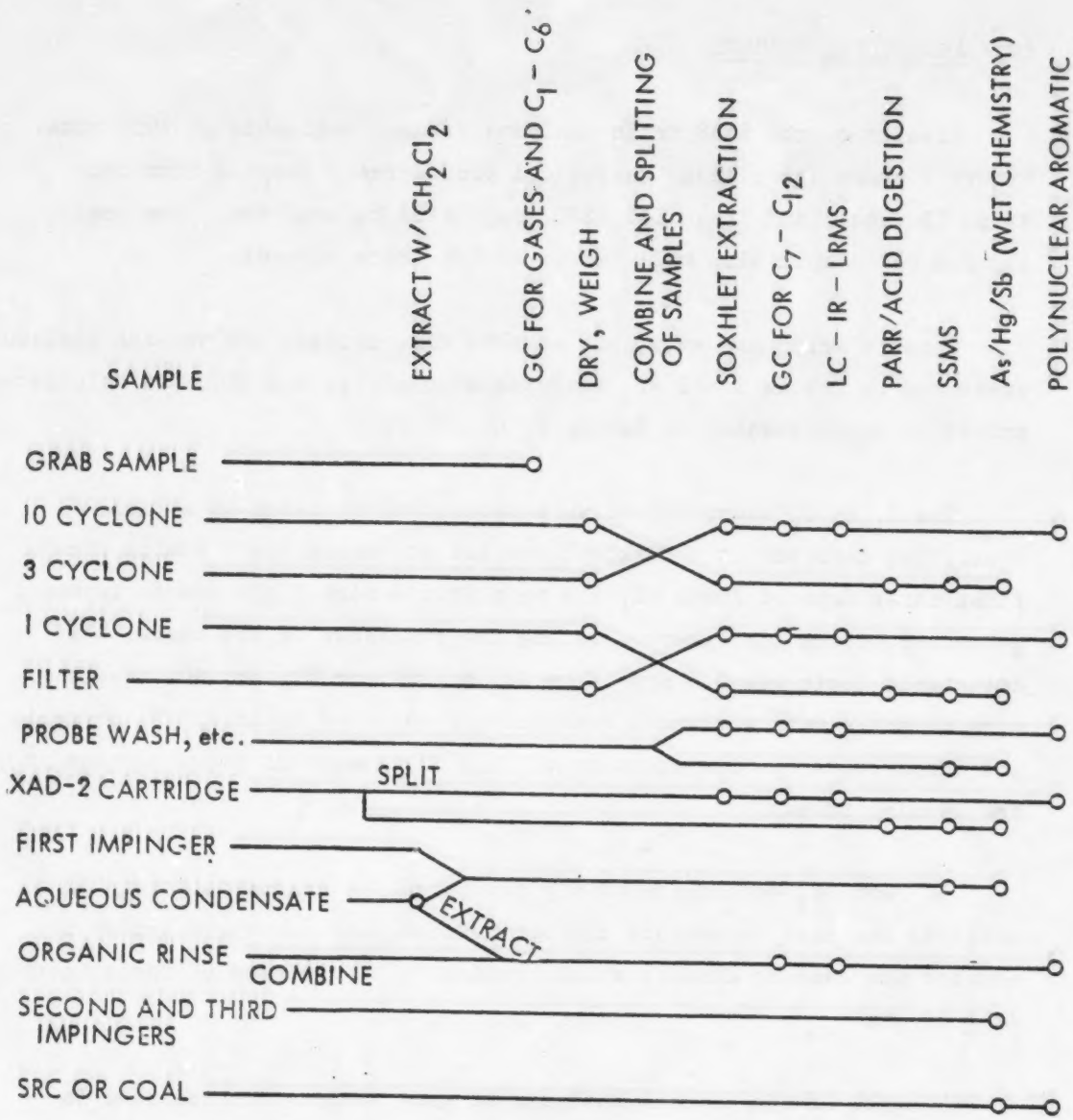

Figure 3. Analytical Schematic

TABLE 3. ON-SITE ANALYSIS OF GRAB SAMPLES PHASE II - COAL COMBUSTION
May 24 to June 6, 1977

	On-Site Gas Chromatograph Analysis											Continuous Sampler				
Date	C_1(4)	C_2(4)	C_3(4)	C_4(4)	C_5(4)	C_6(4)	CO(3)	O_2(1)	CO_2(1)	N_2(1)	SO_x(1)	SO_x(2)	NO_x(2)	Time	Load Condition	Sample Location
5/26	ND	ND	ND	ND	ND	ND	ND	13.31%	7.40%	79.29%	254	260	110	1500	Low	0-1
5/31	ND	ND	ND	ND	ND	ND	ND	14.24%	7.50%	78.26%	329	360	110	1140	Low	0-1
6/02	ND	ND	ND	ND	ND	ND	ND	14.91%	6.56%	78.53%	174	200	100	0300	Low	I-1
5/25	ND	ND	ND	ND	ND	ND	ND	15.73%	5.51%	78.76%	413	500	170	1400	Med	0-1
5/29	ND	ND	ND	ND	ND	ND	ND	13.70%	7.59%	78.71%	209	220	160	1400	Med	I-1
5/30	ND	ND	ND	ND	ND	ND	ND	12.60%	7.35%	80.05%	413	400	150	1240	Med	0-1
5/24	--	--	--	--	--	--	--	------	-----	------	---	745	225	1200	Full	0-1
5/27	ND	ND	ND	ND	ND	ND	ND	13.78%	6.65%	79.66%	311	330	215	1530	Full	0-1
5/28	ND	ND	ND	ND	ND	ND	ND	11.25%	9.86%	78.89%	381	330	220	1420	Full	I-1
6/05	ND	ND	ND	ND	ND	ND	ND	12.14%	9.31%	78.55%	214	200	170	1330	Full	0-3
6/06	ND	ND	ND	ND	ND	ND	ND	11.16%	9.69%	79.15%	210	180	110	1030	Full	0-3

ND - None Detected

I-1 - Inlet to precipitator - 1

0-1 - Outlet to precipitator - 1

0-3 - Outlet to precipitator - 3

SO_x and NO_x values are in ppm

(1) - ± 2% of total concentration

(2) - ± 10 ppm

(3) - 40 ppm detectable limit

(4) - 5 ppm detectable limit 5/25, 5/26, and 5/27, 0.5 ppm detectable limit 5/28 through 6/06

TABLE 4. ON-SITE ANALYSIS OF GRAB SAMPLES PHASE III - SRC COMBUSTION
June 13 to June 24, 1977

	On-Site Gas Chromatograph Analysis											Continuous Sampler				
Date	C_1(4)	C_2(4)	C_3(4)	C_4(4)	C_5(4)	C_6(4)	CO(3)	O_2(1)	CO_2(1)	N_2(1)	SO_x(1)	SO_x(2)	NO_x(2)	Time	Load Condition	Sample Location
6/15	ND	ND	ND	ND	ND	ND	ND	14.79%	5.88%	79.33%	198	225	125	1030	Low	0-1
6/18	ND	ND	ND	ND	ND	ND	ND	13.25%	6.73%	80.02%	216	220	120	1200	Low	I-1
6/19	ND	ND	ND	ND	ND	ND	ND	14.00%	6.26%	79.74%	218	235	125	1230	Low	0-1
6/14	ND	ND	ND	ND	ND	ND	ND	13.65%	7.53%	78.82%	248	260	160	1200	Med	0-1
6/20	--	--	--	--	--	--	--	------	-----	-------	---	---	----	----	Med	0-1
6/21	--	--	--	--	--	--	--	------	-----	-------	---	---	----	----	Med	I-1
6/13	ND	ND	ND	ND	ND	ND	ND	11.39%	9.86%	78.75%	371	325	190	1300	Full	0-1
6/16	ND	ND	ND	ND	ND	ND	ND	10.62%	9.12%	80.26%	410	335	190	1145	Full	0-1
6/17	ND	ND	ND	ND	ND	ND	ND	11.11%	9.15%	79.74%	404	345	190	1100	Full	I-1
6/22	ND	ND	ND	ND	ND	ND	ND	11.20%	9.25%	79.55%	400	345	200	1030	Full	0-3
6/23	ND	ND	ND	ND	ND	ND	ND	10.75%	8.90%	80.35%	393	325	220	1000	Full	0-3
6/24	ND	ND	ND	ND	ND	ND	ND	10.76%	9.29%	79.95%	449	380	260	1100	23.5	0-1

ND - None Detected
I-1 - Inlet to precipitator-1
O-1 - Outlet to precipitator-1
(1) - ± 2% of total concentration
(2) - ± 10 ppm
(3) - 40 ppm detectable limit
(4) - 0.5 ppm detectable limit

O-3 - Outlet to precipitator-3
SO_x and NO_x values are in ppm

Table 5. SRC Combustion Test - Phase II, Coal

Date	Proximate Analysis			Load	SO_2, ppm		NO_x, ppm
	% Sulfur	% Nitrogen	Heating Value, Btu/lb (1)		Grab Sample	Continuous Analyzer	
5/26	0.64	1.38	14935	Low	254	260	110
5/31	1.05	1.81	14723	Low	329	360	110
6/2	NA	NA	NA	Low	174	200	100
5/25	1.09	1.29	14648	Med	413	500	170
5/29	0.62	1.82	14923	Med	209	220	160
5/30	1.15	1.82	14725	Med	403	400	150
5/24	1.34	1.19	14720	Full	NA	745	225
5/27	0.73	1.51	14802	Full	311	330	215
5/28	0.72	1.45	14797	Full	381	330	220
6/5	0.66	1.60	NA	Full	214	200	170
6/6	0.64	1.81	14931	Full	210	180	110

NA - Not Available
(1) Moisture and Ash Free Basis.

Date	Proximate Analysis			Load	SO_2, ppm		NO_x, ppm
	% Sulfur	% Nitrogen	Heating (1) Value, Btu/lb		Grab Sample	Continuous Analyzer	
6/15	0.70	1.54	15742	Low	198	225	125
6/18	0.74	1.80	NA	Low	216	220	120
6/19	0.66	1.82	15668	Low	218	235	125
6/14	0.72	1.62	15729	Med	248	260	160
6/13	0.73	2.02	15591	Full	371	325	190
6/16	0.73	1.77	15602	Full	410	335	190
6/17	0.72	1.47	15775	Full	404	345	190
6/22	0.70	1.37	15647	Full	400	345	200
6/23	0.64	1.37	15534	Full	395	325	220
6/24	0.66	1.71	15505	Wide Open	449	380	260

NA - Not Available

(1) Moisture and Ash Free Basis

Table 7. Combustion Test: SO_2 and NO_x Emissions, Phases II and III

Conditions	Run Number, Precipitator Number 1								
	1	2	3	4	5	6	7	8	9
Coal									
Date	5/24	5/25	5/26	5/27	5/28	5/29	5/30	5/31	6/1
Load, MW	21	14	6	21	21	14	14	7.5	7.5
Fuel Feed, lb/hr	22,300	15,300	7,400	21,000	20,000	15,000	15,000	9,400	9,700
SO_2 lb/10^6 Btu	2.33	1.86	1.50	1.03	1.06	1.84	1.84	2.38	1.39
NO_x lb/10^6 Btu	0.50	0.45	0.46	0.48	0.51	0.50	0.50	0.52	0.50
SRC									
Date	6/13	6/14	6/15	6/16	6/17	6/18	6/19	6/20	6/21
Load, MW	21	14	7.5	21	21	7.5	7.5	14	14
Fuel Feed, lb/hr	17,500	12,000	7,200	17,800	17,600	7,400	7,400	12,000	12,200
SO_2 lb/10^6 Btu	0.99	1.02	1.21	0.97	1.01	1.05	1.13	1.11	1.04
NO_x lb/10^6 Btu	0.41	0.45	0.48	0.39	0.40	0.41	0.41	0.49	0.45

- When the coal sulfur content was approximately the same as the SRC sulfur content, SO_2 emissions per million Btu were equivalent.

- Pounds of NO_x per million Btu are lower in the SRC flue gas than in the coal flue gas, by approximately 15 percent, during the course of this test.

- O_2 levels during SRC runs ran slightly below levels measured in coal combustion. This is directly related to control room operations. Control room data will be available later.

- SO_2 and NO_x concentrations were highest at full load and lowest at low load conditions.

- $C_1 - C_6$ hydrocarbons were not detected during either Phase II or Phase III. The detection limit for these components was 0.5 ppm.

V. OBSERVATIONS AND CONCLUSIONS

No major problems were encountered with the combustion of SRC. Generally, the boiler operated smoothly. On Wednesday, June 15th, however, fire was lost in the boiler for about one hour and the SASS train run was lost. The cause of the problem was believed to be failure of the fuel to reach the burner. This could not directly be attributed to the SRC. Another run was lost when pieces of polyethylene sheet, upon which the SRC was stored, were accidentally scooped up by the front end loader removing the SRC from the storage pile, and fed into the pulverizers. The pulverizers jammed and the run was cancelled.

Results of the test are limited at this time. Future analytical results will be incorporated in a final report. The following preliminary observations can be made. These observations were made either in the field or during preparation of samples for shipment to the laboratory.

- Particulates collected by the SASS train during combustion of SRC were approximately seventy percent carbon. This compares with a typical coal fly ash carbon content of less than ten percent. The high level of carbon is probably due to the boiler type. This 22-1/2 MW boiler was originally designed to burn oil, later modified to burn coal, and further modified prior to Phase II testing. A boiler designed specifically for anthracite coal probably would have burned more efficiently, thus reducing the carbon content in the fly ash. In addition, since the ash content of SRC is much lower than that of coal, identical combustion efficiencies for coal and SRC would result in a proportionately higher carbon content in the fly ash, even though the total carbon in the ash might be the same.

- The total quantity of ash produced from SRC combustion is approximately one percent of that resulting from the coal normally used at this facility. Ash content of that coal is approximately 9 percent as compared to 0.1% for SRC.

- The particle size of SRC ash was much smaller than that of coal fly ash. It is estimated that two to five percent of coal fly ash collected in Phase II was less than one micron. Comparably, approximately twenty percent of the SRC fly ash was collected on the filter following the one micron cyclone.

It should be noted, however, that due to the low density of the SRC ash, particles which should have been collected by the one micron cyclone instead may have passed through the cyclone and collected on the filter. The cyclones in the SASS train were designed to collect particles having the density of coal fly ash, i.e., 1 g/ml. SRC fly ash is approximately one-fourth as dense as coal fly ash. It was observed that, with SRC, the filter had to be changed frequently during each daily test, indicating that after a certain volume of particulate was collected in the cyclone, particles began passing through the one micron cyclone or the particulates collected were agitated and suspended in air, finally collecting on the filter.

- The efficiency of precipitator #1 with SRC ash was estimated by the ERDA Sampling Team to be at best twenty percent. The hoppers to the precipitator were checked and no ash had been collected. The low efficiency of the precipitator is probably due to the high resistivity of the high carbon fly ash.

During the latter part of Phase III, when precipitator #1, boiler #2, and precipitator #2 were shut down, the efficiency of collection by precipitator #3 was significantly higher than observed with precipitator #1. Particle loading at the outlet totaled approximately 1 gram. This compares with about 25 grams for a similar full load test at the outlet to precipitator #1. The filter following the cyclones did not have to be changed during tests at the outlet to precipitator #3. Up to five filter changes had been needed during tests at both the inlet and outlet to precipitator #1.

There was a visible plume during all SRC combustion tests using precipitator #1. The opacity was estimated at Ringelman 2. However, when only precipitator #3 was functioning, there were no visible emissions. During coal combustion, there was evidence of a plume on occasion. There are two possible explanations for this. First, boiler #2, which was shut down when tests were run around precipitator #3, may have been the cause of the visible plume. Second, precipitator #3 may have been inadequate to control the combined emissions from both boiler #2 and boiler #1. It was suggested that without boiler #2 flue gas feeding into precipitator #3, the unit, which is oversized, was effective.

- Although approximately equal volumes (grain loading) of ash were collected from both coal and SRC combustion, about 50 percent less fly ash, by weight, was collected during the SRC tests.

- Some dusting was noted during handling of SRC. A front end loader was used to load a dump truck which in turn emptied into the feed hopper. It was difficult to assess accurately the potential magnitude of this problem, since this method of handling is not standard operating procedure at the plant.

Generally, the SASS train performed adequately. On most occasions, representative flue gas samples were collected. There were, however, several problem areas.

- The SASS train equipment proved to be very cumbersome. This problem was aggravated by space limitations.

- An electrical generator had to be rented in order that an adequate supply of electricity (45 amps) was available. Two runs on Phase III were lost when the generator broke down.

- The entire SASS train operation, including preservation of samples and preparation of the equipment for the next run, required 10 to 12 hours. Three men were required for this labor intensive effort.

- As mentioned earlier, the cyclones were designed to collect particulates with a density comparable to coal fly ash. SRC fly ash, which has one-fourth the density of coal fly ash, may have passed through the cyclones. This may explain why filters had to be changed so frequently. Each time a filter had to be changed, the run had to be stopped, the filter cooled and removed, and the oven reheated. Each filter change required a delay of up to thirty minutes. This may have caused an erroneous particle size distribution since particles may have passed through to the next smaller cyclone or to the filter.

- Because the particulates were extremely light and fine, small amounts of particulate were lost during the subsequent transfer to the plastic sample containers.

- Because of the time constraints, it was impractical to soak the SASS train in 1:1 nitric acid following each run. If this procedure, prescribed in the operator's manual, had been followed, it would have been impossible to both preserve the samples and prepare for the next day's operation.

APPENDIX D

BIBLIOGRAPHY

ASME. 1968. Recommended Guide for the Prediction of the Dispersion of Airborne Effluents. Edited by Maynard Smith. ASME New York, NY.

Gifford, F.A. 1961. Uses of Routine Meteorological Observations for Estimating Atmospheric Dispersion. Nuclear Safety 2,4,47-51.

Hangebrauck, R.P., D.J. VonLehmden and J.E. Meeker. 1964. "Emissions of Polynuclear Hydrocarbons and Other Pollutants from Heat-Generation and Incineration Processes." JAPCA 14(7):267-78.

Hanna, S.R., G.A. Briggs, J. Deardorff, B.A. Egan, F.A. Gifford, and F. Pasquill. 1977. "Meeting Review - AMS Workshop on Stability Classification Schemes and Sigma Curves - Summary of Recommendations." Bull. Amer. Met. Soc. 58(12):1305-09.

Koch, R.C. 1977. "A Study of Ambient SO_2 from Selected Non-Urban Pennsylvania Sources." GEOMET Report Number EF-583. Prepared for the Pennsylvania Dept. of Environmental Resources. June 1977.

Koralek, C.S. and V. Bruce May. 1978. Flue Gas Sampling During the Combustion of Solvent Refined Coal in a Utility Boiler. Hittman Associates, Inc. 9190 Red Branch Road.

Singer, I.A. and M.E. Smith. 1966. Atmospheric Dispersion at Brookhaven National Laboratory. Int. J. Air and Water Poll., 10, 125-135.

Slowik, A.A. and G.N. Pica, 1976. "A Field Comparison of the EPA 'VALLEY' Model, 'Half-Height' Model, and a Suggested New Model in Complex Terrain Under Stable Atmospheric Conditions." Interim Report No. 1. Pennsylvania Electric Co., Johnstown, Pennsylvania.

Touma, J.S. 1977. "Dependence of the Wind Profile Law on Stability for Various Locations." JAPCA 27(9):863-66.

Turner, B. 1970. Workbook of Atmospheric Dispersion Estimates. Report No. AP-26. EPA. Research Triangle Park, North Carolina. Available from U.S. Government Printing Office.

U.S. Environmental Protection Agency. 1975. Compilation of Air Pollution Emission Factors. Third Edition. Report Number AP-42. Available from NTIS as PB275-525.